MEDICAL HISTORIES

AND

REFLECTIONS.

VOLUME THIRD.

BY

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At nunc succincti quæ sunt bona disce libelli.

Martial. lib. ii. epigram 1.

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PREFACE.

The method pursued in the arrangement of my observations, of which I now offer a continuation to the public, has been so far understood and approved, that it is unnecessary to detain the reader, with any introductory remarks on that subject. But it may not be improper to explain, why some topics are unnoticed, which might, perhaps, be expected to have found a place in this volume.

I have

I have observed, that some of my readers have been disappointed, by the omission of well known facts, under some of my divisions. This arises from the nature of the work. I do not profess to write a systematic, or elementary book, which must comprise, or refer to every thing known respecting its objects. It is my intention to supply some deficiency in the history, or some elucidation of the treatment of particular diseases; and, writing for men engaged in practice, I suppose the general facts to be previously known.

On the subject of *Pneumatic Medicine*, I have been silent respecting

specting the *Gases*, because, after repeated trials, I am unable to convince myself, that they possess any remarkable utility. The noxious effects of some of them are sufficiently apparent; but experience proves, that it is unwarrantable to conclude from their power of destroying life, to their power of curing diseases.

The attention excited on this subject, however, has not been lost, whatever may be the fate of the theories, by which it was first introduced. The treatment of several diseases has been improved, by the free use of the nitric acid, which we owe to the happy

talents

talents of Mr. Scott. He has completely succeeded, in rousing the Faculty to the employment of a powerful remedy, long, and unaccountably neglected.

The science of medicine would suffer equally, by an illiberal discouragement of speculative opinions, or by too ready an acquiescence in them. One would lead to a contracted, and degrading empiricism; the other, to a confusing, and pernicious versatility. But while we discuss new theories with candour, we should keep in view the memorable words of Hippocrates: that they, who, aiming at brevity, endeavour

to

to reduce the causes of disease and death to one or two, are liable to be misled in many of their opinions.*

* Περι Αρχαιης Ιητρικης.

CONTENTS.

PAGE.

Rabies Canina.................................... 1

Account of the Establishment of Fever-Wards in Manchester.................................... 41

An Affection of the Lymphatic Vessels, hitherto misunderstood 93

Of the Croup.................................... 131

Of the Hooping Cough.................................... 151

Of the Use of the Nitrous Acid, in Siphylis, and some other Diseases 159

Of the Treatment of the Dying 189

Appendix.

Advice to the Poor 211

On the Use of the Kali Purum, as a Caustic in Hydrophobia, by Mr. Simmons 220

Of the Use of the Nitric Acid in the Lues Venerea, by the same 223

ERRATA.

Page 12, line 20, for adherens, read *adhærens.*

Page 159, and the running title, for nitric acid, read *nitrous acid.*

RABIES CANINA.

Τὴν σαφηνὲιαν.

MEDICAL HISTORIES

AND

REFLECTIONS.

RABIES CANINA.

Of all the monuments of medical superstition, none presents more strongly the characters of former ages, than the history of Rabies Canina. The horror resulting from its origin in the poison instilled by an inferior animal; from the mysterious symptom to which it owes its common appellation of HYDROPHOBIA; and from the dread (whether well or ill founded) of seeing it

it communicated by the unhappy patient to his friends and attendants, during his paroxysms, has caused observers to regard this distemper with a trepidation very unfavourable to enquiry. In the early periods of medicine, convulsive disorders of all kinds were considered with equal terror: epilepsy and hysteria were referred to the operation of supernatural powers, and practitioners became better instructed in their nature, only by the accumulation of facts, and the light of dissection.

In treating the first case of Rabies Canina which occurred to me, I felt all the disquietude resulting from the contradictory modes of practice recommended by authors on the subject. I have since met with another case of the same disease, but the patient died before I could see him, and I could only benefit by the opportunity of inspecting the body. The advantage of obtaining a second accurate dissection, in a disorder so obscure, led me to examine the accounts

counts preserved to us, of appearances after death, and the result of my enquiry has been an attempt to arrange facts, hitherto indiscriminately amassed. I shall first relate particularly my second case of hydrophobia, and then endeavour to conclude, from many similar observations, respecting circumstances hitherto overlooked, in treatises on this singular disease.

A man between forty and fifty years of age, was brought into the Infirmary, October 12th, 1796, from Gravel-lane, Salford, said to be affected with hydrophobia, in consequence of the bite of a mad dog. It was the sixth day of the disease. About six weeks before, he had caressed a strange dog, which came into the court-yard of his master's brewery; the dog bit him in the right thumb, and the wound bled considerably. He apprehended no danger, and took no precautions. On the sixth of October, he shewed a disinclination to swallow liquids, and in the opinion of the

the persons who were commonly with him, was generally in a delirious state. He complained of coldness when the door was opened, so that on the first and second day he imagined his disorder to be a sore throat, and even thought that his throat was externally swelled. The circumstance of the bite did not occur to his memory, till the day before his death, when one of the bystanders asked him whether he had ever met with such an accident. He was timorous, startled by all noises, and impressed with the belief that he was harrassed by witches, dogs, and annoyances of different kinds. Two days before death, he underwent several slight convulsive attacks. He never attempted to bite or injure any of the attendants, though it was often difficult to hold him during his frenzy.

The scar of the wound on his thumb was visible. It did not inflame, nor give him any pain previous to the attack, or during its continuance.

All

All these particulars I learnt from a very intelligent man, who had attended him, from personal regard, through the whole course of his illness.

Between seven and eight o'clock on the evening of October 12th, a hackney coach was sent to his house, to convey him to the Infirmary. It happened at the time to rain very hard. He hurried into the carriage with great impatience, seeming much irritated by being wetted, and observed, that had it not rained he would not have got into a coach. Upon arriving at the Infirmary gates, he insisted on walking through the garden, though evidently very uneasy under the falling shower. About half an hour after he entered the ward, he was seized with strong convulsions; a large quantity of ropy saliva flowed, for the first time, from his mouth, and he died before I arrived at the hospital.

Some hesitation was expressed by his family respecting the opening of the body,

body, and the inspection was delayed, to my great regret, till the next day.

Permission being at length obtained, the body was carefully examined in my presence by Mr. Simmons, on the 13th October; not quite twenty hours after death. The corpse was remarkably pale, excepting that the cheeks were somewhat livid.

On opening the head, we found an effusion of fluid between the pia mater and tunica arachnoides, which distended the former considerably. There was not more water than usual in each of the ventricles. There was a curious appearance of ossification on one of the peduncles of the pineal gland, and the gland itself contained sabulous matter.

On examining the thorax, there were some adhesions of the pleura covering the right lobe of the lungs, to that lining the ribs on the same side. The left lobe was so completely filled with blood,

blood, as to have acquired considerable weight and solidity.

In the abdomen, the liver was changed in colour, and streaked with white spots. The patient had been, I was told, rather intemperate. The external surface of the stomach was much inflamed, especially on the greater curvature. The œsophagus was completely sound. On opening the stomach, the villous coat was found to be generally inflamed in irregular points, and there was an appearance of abrasion, similar to that remarked in Johnson, my former hydrophobic patient. This inflammation did not extend beyond the villous coat, for on cutting into the muscular coat, it appeared quite sound. The affection did not reach to the pylorus.

The near resemblance of the appearances on dissection, in these two cases, led me to enquire whether the dread of water, in cases of Rabies produced by the bite of mad animals, had been

been accompanied by inflammation of the internal coat of the stomach or œsophagus in other instances: and from this enquiry, I was induced to take a more general view of the subject, and to examine how far the dread of water is essential to constitute the existence of Rabies; as cases are said to have occurred, in which neither this symptom, during life, nor inflammation of the stomach or œsophagus after death, had been observed.

Many cases of rabies are mentioned by authors, in which, upon dissection, the appearance of the internal vicera was found to be altered; but as they express themselves only in the general terms of *aridity*, or *dryness*, it is impossible to form an exact idea of the appearances.* Lieutaud mentions a case, in which the œsophagus was inflamed:† "Instituta sectione cadaveris,

* Lieutaud, Histor. Anatom. Med. tom. i. p. 369. Observ. 1552, p. 370, observ. 1552. (a.) P. 515, observ. 312. Id. tom. ii. p. 16, observ. 457. P. 81, observ. 727. Mead.

† Ib. tom. ii, p. 305, observ. 86.

cadaveris, cujusdam juvenis, post *morsum a cane rabido hydrophobia* sublati, inveniebatur œsophagus PHLOGOSI TACTUS. Tracheæ arteriæ facies interior nonnihil etiam rubens, nonnullas inflammationis notas præ se ferebat. Cystis fellea bile nigricante scatebat inculpato hepate. Cerebrum cum suis involucris, siccius et aridius videbatur quam solet. Vasa demum in qualibet parte sanguine fluidissimo turgentia annotabantur."* [Act. Paris.]

Dr. Hoffman mentions appearances still more nearly approaching to those which occurred in my cases.† "Digna est notatu observatio, quam tradit Cl. Zwingerus, Dec. 4, Ephem. Obs. qui in cadavere rustici hydrophobia secundo mense

* Non tantum œsophagus, sed et ventriculus, et intestina inflammata rubescebant in alio cadavere.

Hernand. rer. Mexic. Medic. Thesaur: quoted by Van Swieten.

There was Inflammation of the œsophagus, in a supposed case of hydrophobia, sent to me by Mr. Hoffman, which Dr. Lettsome has published in the appendix to Dr. Mease's treatise.

† Medicin. Rational. System. De Venenis, &c.

mense ob acceptum a rabido cane vulnus, correpti et extincti, in humero et scapula simistri lateris, ut et in reliquo dorso gangrænæ et sphaceli indicia observavit, in intestinis autem et stomachi tunicis, præcipue circa utraque ejus orificia, *maculas rubicundas,* ceu totidem inflammatiuncularum signa, thoracis cameram undique sanguine suffusam, et ex rubro livescentem, pulmonem inflammatum, interstitia membranosa circulorum asperæ arteriæ cartilagineorum intensissimè rubentia, diaphragma maximè circa costas inflammatum, in corde, vasis majoribus, et pulmonibus sanguinem concretum, et omni sero fluido destitutum invenit."

Dr. Hoffman has omitted a very important circumstance of this dissection: " Pulmo pleuræ adherens, concreti sanguinis molem referebat."*

" Quidam post aliquot menses *a morsu canis*

* Lieutaud, Hist. Anat. Med. tom. i. p. 445, obs. 39.

canis rabidi, manifesta *hydrophobia* corripitur, qua, variis incassum adhibitis præsidiis, e medio tollitur.

Inter cadaveris exenterationem, occurrit vesicula fellis bile nigerrima repleta, *pulmones conspiciuntur nigri,* & graveolentes.*

Van Swieten speaks of inflammation of the organs of deglutition, as a common appearance in the dissection of patients who die in this disorder.† He also mentions the liquid state of the blood, which has been observed by many other writers, but he does not acquaint us with the date of the respective dissections from the death of the patients, a circumstance which ought always to be mentioned in cases of nicety. He observes what is perhaps more important; the general state of the lungs: "Pulmones coacervato omni fere cruore incredibiliter plenos;" and its necessary consequence,

* Morgagni, apud Lieutaud, tom. i. p. 515, obs. 312.
† Commentar. tom. iii. p. 561.

consequence, polypous concretions in the heart, which are generally found in patients dying of peripneumony.*

In a young man, who died in consequence of the bite of a mad fox, with symptoms of Rabies, the fauces were found very much inflamed; the left lobe of the lungs was black, with the *vesicles*† full of black blood: the surface in some places, which the blackness had not covered, appearing blistered, as if raised by cantharides.

It must have been from observations of this kind, that a writer called by MANGET,‡ *Josephus ab Aromatariis*, supposed the Rabies to be a sort of contagious sore throat.

"Si on ouvre," says Sauvages," les cadavres

* Lieutaud, Hist. Anat. Med. tom. i. Læsiones Pectoris.

† This is the term used in the Narration. Philosoph. Transact. abridged, tom. v. p. 369.

‡ Bibliothec. Anat. p. 400.

davres de ces infortunés peu de tems après leur mort il s'en exhale une odeur très fètide; leur ventre est bouffi par les vents; leur estomac est farci d'une sanie verte; *on remarque dans leur œsophage des taches rouges*, tirant sur le noir; leurs veines sont pleines d'un sang dissous; leurs visceres sont secs et arides. D'après cela, il n'est pas etonnant que le malade ne boive plus pendant deux ou trois jours."*

In a case published by Bartholine,† the liver was found inflamed on the concave side, and adhering to the other viscera; the inner coat of the stomach had become so tender that it could be rubbed off with the fingers. The upper orifice of the stomach, *and the whole of the œsophagus*, were remarkably narrow, and appeared in a state of constriction. The internal surface of the œsophagus does not seem to have been examined.

It

* Nosologie, tom. ii. p. 702.

† Acta Danica, ann. 1682.

It appears from these facts, that the dread of water and of cold air, in cases of Rabies, depends on inflammation, and spasmodic affections of the œsophagus and stomach, which sometimes extend to the trachea, the liver, the pericardium, or the heart itself. It also appears, that the lungs are sometimes affected, in a manner hitherto neglected by writers on this complaint; that an effusion of blood into their substance takes place, similar to that which proves mortal in certain states of peripneumony. When this occurs to the dissector, it is unnecessary to look for any other cause of death.

But the aversion to water has not been found a constant symptom of Rabies, and it has frequently appeared as a symptom of other disorders. Hence have arisen the great confusion and obscurity of observations, which seem to encrease in proportion as observers have multiplied.

If the single symptom of aversion to liquids, and to cold air, be supposed to characterize Rabies, then several cases, in which patients have died from the bite of mad dogs, not only without having felt this symptom, but even suffering from extreme thirst, cannot be denominated canine madness; which is absurd. And on the contrary, many instances of common diseases, curable by common remedies, would be reckoned cases of Rabies, merely because the patients had felt an aversion to liquids and cold air, at some period of the disorder. Medical writers have chiefly erred in the latter mode.

HILDANUS mentions a case of Rabies, occasioned by the bite of a mad animal,* in which there was restlessness, nausea, anxiety, and tightness in the breast, and pains in the lower belly. Convulsions and delirium followed, and death took place on the sixth day: but there was no hydrophobia.

MEAD

* P. 365, observ. 88.

MEAD says,* "a learned physician has assured me, that in Shropshire, he saw three patients in one year, who, at the ordinary time of about thirty or forty days after the wound, all fell into such nervous disorders as have been described, a fever, delirium, palpitation of the heart, spasms, &c, and died on the third day: yet none of them, during this melancholy scene, had any difficulty of swallowing, or shewed any signs of a dread of liquids."

TULPIUS mentions a patient, who upon being attacked with Rabies, in consequence of the bite of a mad dog, complained of intolerable thirst: "torreri viscera, et præ fervido ardore, tantas intus excitari angustias, ut demorsus senex rejiceret modo stragula sibi imposita, modo vero exsiliret nudus e lecto: exclamans stentorea voce, ardentius sibi esse incendium, et urgentiorem sitim, quam ut posset ab homine tolerari.†

Sauvages

* De Venen. † Observation.

Sauvages says, it has been frequently observed, that animals seized with Rabies have no dread of water, and that they not only drink, but betake themselves to it and swim, without any reluctance.*

In the following instance, there seems to have been no aversion for liquids, in a rabid animal.

A sow, which had been bitten by a mad dog, was shut up and carefully observed. During five days the animal fed as usual; the sixth it was found standing with its head leaning on its food, and in this posture it remained three days. The tenth it was seized with a raging fit of madness: it foamed at the mouth: wandered backwards and forwards in the stable, and from time to time, knocked its head against one of the planks. The fit continued seven hours, after which the creature grew calm and lay down. *Mr. Beudon* seized this instant

* Nosologie, tom. ii. p. 700.

stant to employ his remedy. He let down, through the hole into the stable, a caldron, in which he had warmed four pots of strong vinegar: after which he stopped the holes in the stable, to prevent all communication with the outer air. In about an hour, his servant, who listened at the door to the motions of the animal, heard a noise which resembled drinking; and, upon examination, the sow was observed standing and drinking the vinegar with the greatest avidity: upon this, *Mr. Beudon* placed in the trough a quantity of bran moistened with vinegar, of which the day following nothing remained. This plan was followed by the complete recovery of the animal: the dog by which it had been bitten, and a small dog which had sustained the same injury with the sow, were treated in the same manner, and were both cured.*

It is evident, from these facts, that the term

* Histoire de la Societé Royale de Medicine, à Paris. Pour les années 1777, 1778.

term *Hydrophobia* is very improper, and it will soon appear to what confusion its use has given rise. The term βραχυποτεια, from a word employed on some occasions by Hippocrates, is more truly descriptive of this symptom,* which consists in difficulty of swallowing, not in any aversion to fluids previous to the experience of this difficulty.

I proceed to shew, that many disorders, totally unconnected with Rabies, are accompanied with the βραχυποτεια, and that several modern writers have been led by the term hydrophobia, to mistake an accessory symptom for a specific disease.

" This disease," says Dr. Mead, " should have been called Δυσκατάποσις, a difficulty in swallowing; rather than Ὑδροφοβια, a dread of water.

" It will serve both to confirm and illustrate

* Sauvages, Nosologie, loc. citat.

illustrate this reasoning, to take notice, that there are other distempers besides this, (and all, indeed, of the nervous kind) in which the same frightful symptom is sometimes observed. Authors have remarked it in malignant fevers; and a common melancholy has been seen to end fatally in it. I have known it, in the height of a violent hysteric disorder, to have continued for many hours, till the convulsive motions in the throat were quieted by proper medicines: and I remember a case, in which fits of a palpitation of the heart were attended with so great a degree of it, that it seemed not to differ from the true hydrophobia."*

It can hardly fail to surprise the reader, that so obvious a cause of difficulty in swallowing, as inflammation of the œsophagus, should have been so much disregarded by authors, while they have been eager to collect together the most transient

* Of the mad dog.

transient spasmodic complaints, affecting deglutition, under the title of hydrophobia. This mistake, I imagine, has been greatly owing to the want of dissections, in this disease. The opportunities are rare in themselves, and when they actually offer, the operator is sometimes timid, and unwilling to run the risk of infection, by exposing his hands to the contact of the salivary secretion.

It could not otherwise have escaped the notice of practitioners, that the symptoms attending the difficulty of swallowing, in cases of angina, of inflammation in the œsophagus, and of spasmodic affections, or more permanent irritation of the stomach, are readily distinguishable from each other, and cannot be conveniently referred to one general title.

But while the dread of water was supposed to be an essential circumstance of a disease beyond the reach of investigation, physicians were more disposed

to

to rank other diseases under its standard, than to place it on its proper level.

Three cases of the accession of this symptom are quoted by Sauvages;* one from the *Journal de Medicine*, April 1766, where a difficulty in swallowing supervened to typhus; another from the *Miscellanea Curiosa*, where it accompanied the variolous sore-throat; and a third from the *Journal Encyclopedique*, where it is important to remark, that it supervened to peripneumony.

In reviewing Lieutaud's list of dissections, it will be found that difficulty of swallowing, in different degrees, has attended

* Nosologie, tom. ii. p. 705.

It would have been idle to have noticed some of these cases, if Sauvages himself had not quoted them under the title of Hydrophobia, and if it were not useful to shew the rage which has prevailed, for multiplying instances of this disorder, without regard to the very elements of pathology. Sauvages felt the inaccuracy which this disposition introduced, and very properly opposed it. But he did not go to the full extent of the question.

attended scirrhus of the stomach.* Boerhaave used to mention an instance, in which the difficulty of drinking, and consequent dread of water, accompanied a fever occasioned by heat and fatigue, joined to the abuse of spirituous liquor.† But the most remarkable cases of this nature are to be found in the Edinburgh Medical Essays,‡ where all the symptoms of *hydrophobia*, as it is usually understood, were produced by unusual irritation in the stomach, without the most distant suspicion of rabid poison. In one of these cases, the disease seems to have arisen from an accumulation of bile;

* Tom. i. p. 25. observ. 90, 91; et p. 27, observ. 96.

† Cel. Boerhaavius solebat hac occasione auditoribus suis affirmare, vidisse se lictorem, qui carnificem aliunde accerscere debuerat, ut publica de scelesto homine sumeretur pœna, incidisse in febrim ardentissimam, omnemque potum oblatum cum summo horrore repudiasse, & tertio die periisse: miser ille calidissima tempestate multum corpus moverat, deinde per quatuor horas nudato capite, solis radiis exposito, in scapha sederat, totaque hoc die, solo fere spiritu vini usus fuerat.

Van Swieten Comment. tom. iii. p. 537.

‡ Vol. i. p. 222 and 227.

bile; in the other there appeared to be inflammation of the stomach: in this latter case, the patient frequently spouted saliva from his mouth, and had all the horror at the sight of water which occurs in cases of true Rabies, where the difficulty of drinking has been experienced. Both these persons recovered.

Mr. Hoffman, surgeon to the King of Prussia, sent me the following case, in the year 1792. "Give me leave to mention to you a case of hydrophobia vera, without the bite of a mad dog. A man got cold, and had all the symptoms of pleurisy. He was bled, and treated upon the antiphlogistic plan: respiration however remained difficult, and the following day the patient could not take any fluid without falling into convulsions and tetanus. He was bled again, and a blister was applied on the whole neck, but the convulsions continued *with a constant discharge of saliva*, and he now attempted to bite every person who came near him. These symptoms

continued

continued twenty-four hours, when the patient died. On dissection, all the vessels of the brain were found very much distended with blood, and in the sinus longitudinalis the blood was of a black colour, and nearly coagulated. The third ventricle of the brain was full of water. The diaphragm was inflamed in one part near the middle, and was throughout of a red colour. The liver had a gangrenous spot; the stomach was small and contracted; the intestines were much inflated with air, and in several parts inflamed; the upper part of the œsophagus was also a little inflamed. I think it is very clear, in this case, that the hydrophobia was entirely a symptom of inflammation produced by cold. The case is related by Mr. Thedon of Berlin."

But this symptom does not always arise from local irritation: Dr. Percival has justly remarked, in his letter to Dr. Haygarth, that the difficulty of drinking is sometimes produced by the power of

imagination alone. I met with an instance of this kind lately, in which it was very difficult to prevent a person from rendering himself completely hydrophobic. Himself and his wife had been bitten by a dog which they supposed to be mad. The woman thought herself well; but the man, a meagre hypochondriacal subject, fancied that he had uneasiness in his throat, and that he could hardly swallow any thing. When he first applied to me, a medical friend, who was present, asked him whether he had any sensation of heat at the pit of the stomach. He answered in the negative, doubfully; but, next day I found him in bed, complaining of *heat at the pit of the stomach*, difficulty of swallowing, tremors, and confusion in the head. He continued to persuade himself he was ill of Rabies, and confined himself to bed, expecting death, for nearly a fortnight. At last, I remarked to him, that persons who were attacked by Rabies never survived more than six days: this drew him out of bed, and he

he began to walk about. By a little indulgence of his fears, this might have been converted into a *very clear case* of *spontaneous hydrophobia*, and the patient would probably have died.

The application of the term *hydrophobia* to an accessory symptom, supervening to such a variety of diseases, evidently tends only to mislead, by directing the attention of practitioners to supposed analogies, which have no other foundation than the abuse of a word. To be correct, we must preserve the distinction between Rabies, and diseases which are essentially different from it in their usual appearance, and which only acquire an adventitious resemblance to it under uncommon circumstances. Several cases have been described, of late years, under the title of *spontaneous hydrophobia*. I think it very evident, from the view I have exhibited, that no such disease ever exists.*
If

* This position has been maintained with great so-

If those cases be analyzed, they will be found to belong to the class of hysterical, febrile, mental, or spasmodic disorders, and by ranking them under their proper titles, we shall at once clear this subject from a great and accumulating mass of error. By considering the matter in this point of view, we are also enabled to explain the contradictory reports, hitherto so perplexing, on the effects of remedies in Rabies. It is easy to perceive, that evacuant and antispasmodic remedies would remove a difficulty in swallowing, occasioned by inflammation or spasm in the stomach or œsophagus; that bark and wine would cure it in cases of typhus, or of low mania; and that opium and the cold bath would be successful, when it accompanied tetanus.

When

lidity to a certain extent, by Dr. Mease, in his accurate Treatise on Hydrophobia, p. 6 to 11.

Dr. John Hunter had advanced a similar opinion, by way of conjecture, in his Observations on Canine Madness. Transactions Medical and Chirurgical, p. 302, 303.

When these false cases are set aside, perhaps we gain something respecting the *ratio symptomatum*, and the practice in Rabies. The difficulty of swallowing, in this disease, is probably almost always attended with inflammation of the stomach or œsophagus: we cannot, therefore, hesitate to bleed, and to apply rubefacients of the most active kind to the skin, as near the seat of inflammation as possible, whenever this symptom appears in a clearly-marked case of Rabies. It is of some advantage, that we can nearly ascertain the duration of the disease, for, if the practitioner be consulted early, he can determine with precision, whether a succession of blisters, or of stimulants quicker in their operation, be better adapted to the remaining portion of time. But the mode of applying these remedies may also be varied, by attention to the view of the disease next to be mentioned.

It has been remarked in many of the dissections, that the lungs have been loaded

loaded with blood, to such a degree, that some part of them has appeared almost a solid mass, exactly resembling the phænomena which occur, when blood has been effused into the substance of the lungs in pneumonic inflammation. The only question upon this point is, whether this happens so frequently as to constitute an essential part of the disease. I am inclined to suspect that it does. It is true, that in my first patient, Johnson, there was no particular disease visible in the lungs, which surprised me more, as he had suffered repeated attacks of pain in the breast and sides, and of cough, previous to the accession of the Rabies. But the appearance of effusion in my second patient was so striking, and the phænomenon is mentioned so frequently, without reference to theory, by authors, that it is allowable to direct the attention of practitioners to this circumstance.

This state of the lungs is obviously a sufficient cause of death, and when it is detected,

detected, affords a solution of our doubts on that head. If it be supposed, that congestion of the lungs takes place in the first instance, the affection of the brain, and the appearances of effusion or congestion discovered in it, receive also a full explanation. And that this supposition is not improbable, appears from the great anxiety and oppression at the breast, of which the sick so generally complain, which Dr. J. Hunter* supposes to depend on an affection of the heart, but which the review of dissections inclines me to refer to the lungs. Symptoms of compression of the brain are sufficiently remarkable, in the ordinary course of the disease, such as the delirium, and the convulsions, which are frequently of the epileptic type; but, in some cases, the appearances have been still more decisive. In a patient of Dr. Mead's,† a paralytic affection of the right arm supervened, and the patient complained of mist before his eyes. A patient

* Transactions Medical and Chirurgical, p. 307.

† Philosophical Transactions abridged, vol. p. 369.

tient of Dr. Howman's*, who was seized with Rabies in consequence of a recent bite, was affected, at the very commencement of the disease, with palsy of the right arm, and intermission of the pulse at the wrist of that arm. The difficulty of swallowing did not take place till the third night; and the paralytic complaint continued to encrease till death.

If future dissections should prove, that congestion in the lungs generally appears in those who die of Rabies, I confess that I should be disposed to consider this disease as dependent on the obstruction of circulation in that important organ. Accumulation of blood in the head, and compression of the brain, must be the consequence of such an obstruction, rapidly formed. The quick, panting respiration, anxiety and sudden debility, may be referred to the same cause. In fact, we find a similar degree

* Philosophical Transactions abridged, vol. v. p. 369.

degree of tremor attendant on the croup, which consists in inflammation of the trachea, and destroys by suffocation. That degree of inflammation in the stomach or œsophagus, which produces the difficulty of swallowing liquids, may not only arise from sympathy, but the symptom itself may occur in consequence of the state of the lungs alone. This will appear from the following case, given by Bonetus.

"Quidam voracissimus enteroceles molestias declinaturus, castrationi se submisit, feliciter peractæ. Omnia ritè se habebant, cum post tres septimanas *difficultate deglutiendi* et *difficili respiratione* prehenditur. Tertia die lingua erat carbone nigrior, urgebat deglutiendi et respirandi difficultas. Nil in hac anginæ specie, nec intus nec extra apparebat, si linguæ nigrorem exceperis.

"Mortui aperto corpore, salva reperta est trachea arteria, et omnis phlegmonis expers. Thymus intumuerat, et atro sanguine.

sanguine scatens tracheam premebat. Pulmones se præbent inflammati, et creberrimis maculis nigris conspersi cum gangrænæ signis evidentibus."*

It will appear, on reference to Lieutaud, under the title, *Læsiones Pectoris*, how frequently inflammation of the higher part of the abdominal viscera, accompanies pneumonic inflammation.

To all these considerations we must add, the suddenness with which death takes place, and the remarkable fluidity of the blood, so commonly observed in dissections; circumstances which cannot be satisfactorily explained, without attending to the state of the lungs, which I suppose to exist.

These conclusions, it must be owned, are uncertain, because the facts from which they are drawn are incomplete. I offer

* Lieutaud, Hist. Anat. Med. tom. i. p. 454, observ. 69.

I offer them only as conjectures, which may give a new direction to farther enquiries, on a subject equally important and obscure.

In the mean time, it cannot be uninteresting to consider, what mode of practice this view of the disease would determine us to adopt. Repeated blistering would certainly be adviseable, if the period of the disease should admit this remedy; and the application should be made to the head, as well as to the chest and spine. Blood should be drawn from the jugular veins, and perhaps the head and lungs would be best relieved by the repetition of bleedings. The state of the pulse, and the apparent degree of debility, should not deter the practitioner from using this remedy, on my supposition. Those symptoms may be considered as the necessary consequence of impeded circulation in the lungs. Dr. Nugent's case of Rabies was cured by large, and repeated general bleedings. In the present state of know-
ledge

ledge, little will be attributed to the musk which he exhibited. Great attention should undoubtedly be paid to the state of the pulse, while the blood flows from the vein, especially after the first bleeding. The same cautions apply here, which have been given by practical writers, on the subject of repeated bleeding in peripneumony. In fact, there is no disease which is accompanied by more striking marks of debility, at its first appearance, than peripneumony. If, however, the practitioner should be alarmed at the idea of frequent general bleeding, leeches may be applied to the temples. With the view of relieving the lungs from congestion, by stimulating the exhalents, and of extinguishing the existing disease, by producing another less dangerous, the success said to have attended the free use of mercury is perfectly reconcileable. I should join opium, in pretty large doses, with this process. Calomel with opium may be given internally, while the mercurial friction is applied to the limbs: I believe

believe that the mouth will be sooner affected in this manner; and, considering the short duration of the disease, it is of the highest importance to excite a ptyalism early.

So greatly would this hypothesis alter my views of the indications of cure, from opinions which I have formerly expressed, that it would induce me to prohibit entirely the use of the cold bath, and of bark, during the existence of the symptoms.

Respecting the use of oil, I should be more uncertain. Dr. Shadwell's case appears to favour it; yet there was something very unusual in that case, both in the mode of attack, which resembled phrenzy more than Rabies,* and in the duration of the disease; for eleven days elapsed from the first symptoms of illness, and nine from the phrenitic attack, before the difficulty of swallowing

* Memoirs of the Medical Society of London, vol. iii. p. 454.

lowing, and dread of cold air left the patient. If oil were given, I should not allow it to supersede the mercurial course.

As it is absolutely necessary to choose among the contradictory methods of treatment, recommended in Rabies, I have thus ventured to state the plan upon which I shall proceed, if any other cases occur to me; but with a deep conviction, that the grounds of preference are not yet sufficiently ascertained. This is a subject, concerning which the mind of the medical philosopher cannot remain at rest. It is allowable to hope, that careful dissections, and accurate discrimination of symptoms, will at some future, period afford the power of removing this hitherto intractable disease.

ACCOUNT
of
THE ESTABLISHMENT
of
FEVER-WARDS
in
Manchester.

—I have always thought it a greater happiness to discover a certain method of curing, even the slightest disease, than to accumulate the largest fortune; and whoever compasses the former, I esteem [him] not only happier, but wiser and better too.

SYDENHAM.

ACCOUNT OF THE ESTABLISHMENT OF FEVER-WARDS IN MANCHESTER.

In the two preceding volumes, I thought it incumbent on me to lay before the public, a view of the misery and havock, produced by the prevalence of infectious fevers, among the poor in manufacturing towns. A more agreeable task is now before me; it is, to explain the measures which have been adopted, in consequence of my representations, for remedying those evils, and the success attending the new institution, which has almost exceeded my warmest expectations.

Towards the close of the year 1795, an alarming infectious fever broke out at

at Ashton-under-lyne, which was supposed to have originated in the cotton-works of that place. Upwards of three hundred persons were attacked by it, in less than three months, and though the mortality was not great, a degree of terror was excited almost equal to that which the appearance of the plague would have inspired. I have been told that travellers were even afraid to pass through the town. The disease raged principally among the poor, and did not extend so much as was apprehended, into the houses of the more opulent. A committee was formed for the relief of the sufferers, and a subscription was raised for supplying them with medical attendance, medicines, and wine. An attempt was also made, to provide a house for the reception of fever-patients, but from the general prejudices of the sick, it was impossible to procure their removal from their own houses.

Mr. Ogden, surgeon at Ashton, enquired with great accuracy, into the origin

gin of this epidemic, and it appeared very clearly, that the whole mischief had arisen from the admission of a young woman from Manchester, into one of the rooms of the cotton-works, who had come from a house infected with fever, in this town. Mr. Ogden informed me, that he observed an eruption, which made its appearance on the fourth or fifth day of the fever, but without relieving the symptoms, and indeed without any evident effect on the course of the disease. I had seen something of the same kind about that time, in Manchester, but not so distinctly. The observation, may be worth recording, however, as I can place the firmest reliance on Mr. Ogden's report, and as he drew it from a great number of cases.

The attention and uneasiness thus excited, on the subject of fever, appeared to some gentlemen, who had interested themselves in my preceding details of the state of the poor, to offer a favourable occasion for forming a Board of Health,

Health, which I had proposed in the second volume of this work. Mr. Bayley of Hope, Dr. Percival, Mr. Meadowcroft, and several other gentlemen, requested me to draw up a plan for this institution, and appointed a meeting to receive the paper, and to begin a subscription for carrying the measures which should be recommended into execution.

A copy of this paper follows, which was read at a very numerous and very respectable meeting of the friends of the poor; among whom were several proprietors of large cotton-mills, who were desirous to use every means for preserving the health of the persons employed by them.

"To the gentlemen meeting at the Bridgewater-arms.

"Gentlemen,

"At the request of some of your number, who originally proposed this meeting, I submit to your consideration

consideration a few remarks towards the formation of a board, or committee, for superintending the health of the manufacturing poor, in Manchester and Salford. A principal object of this committee, must be that of diminishing the frequency of the epidemic fever, which has so often alarmed us in this place, which is now very prevalent in some parts of the town, and has spread itself to a very unusual extent in some of the neighbouring towns. The circumstances which produce and propagate this disease, seem to require more immediately the interference of a public body, and these once remedied, the general health of the poor must be greatly improved.

Having already published my sentiments pretty fully on this subject, I shall remark, without entering into any reasoning, that the principal sources of fever among our poor, are lodging-houses, cellars, cotton-mills, and the incautious intercourse of the poor with each other, in places infected.

1. Re-

1. Respecting lodging-houses, I have observed elsewhere, that the most desirable means of prevention would be to subject them to licences, which would bring them under the controul of the magistrate. At present, as the town is much less crouded than it was in 1792, the mischief arising from these houses is less; and until the committee can acquire the proper powers, it would perhaps be sufficient, to be at the expence of white-washing such as shall be reported to be infected and dirty, or when they are found to be over-crouded, to prevail on some of the lodgers to remove, which may be readily done.

2. The number of damp and very ill-ventilated cellars, inhabited in many parts of the town, is a more extensive and permanent evil. It may be necessary to explain to gentlemen who have not visited such places, that they each consist of two rooms under-ground; the front apartment of which, used as a kitchen, though frequently noxious by its

its dampness and closeness, is greatly preferable to the back-room: the latter has only one small window, which, though on a level with the outer ground, is near the roof of the cellar; it is often patched with boards or paper, and, in its best state, is so much covered with mud, as to admit very little either of air or light. In this cell, the beds of the whole family, sometimes consisting of seven or eight, are placed. The floor of this room is often unpaved: the beds are fixed on the damp earth. But the floor, even when paved, is always damp. In such places, where a candle is required even at noon day, to examine a patient, I have seen the sick without bedsteads, lying on rags; they can seldom afford straw. This deplorable state of misery becomes frequently the origin, and certainly supports in a great degree the progress, of infectious fevers. I have been able, in many instances, to trace the infection from cellar to cellar, and to say where it might have been stopped, by prudent management on the part of the infected

infected family. But it is likewise very difficult to eradicate the fever, when it seizes a family thus situated. It generally attacks them all in succession, and the convalescents, from their confinement in the midst of infection, have frequent relapses, attended with encreasing danger, so that the disease continues in the same spot, for several months together. The recovery even of those who do not relapse, is also tedious and imperfect, beyond the conception of any who have not experienced cases of this nature. The want of proper nurses must be added, as none of the least evils attending this unfortunate class of people. I have no hesitation in asserting, that many lives are annually lost, from this cause alone. It is extremely difficult, at present, to procure a nurse of good character, upon any terms, and it is often necessary to employ persons, on whom little dependance can be placed, that the sick may not be entirely destitute of assistance.

Great advantages would therefore be derived, from removing the infected, and in some instances, perhaps, the whole family, from such dreadful habitations as I have described, into a clean, airy house, which should be provided by the committee, till their own cellars could be whitewashed, and sweetened by slaking quicklime on the floors. It is a question for the decision of the committee, whether they would prefer renting a house, or building a fever-ward for this purpose. I confess, that I should incline to the latter, for these reasons.

1. In the erection of a fever-ward, situation, air, and convenience would be better consulted: in renting a house, some of these very important objects might be unavoidably superseded.

2. Upon such a permanent establishment, one or more women of decent character might be induced to undertake the office of nurses.

3. By

3. By thus bringing the worst, and most neglected cases under one roof, the chance of spreading infection would be diminished, while attention to the patients on the part of the nurses would be better secured, than if the patients were dispersed in different houses, as, in reality, it would be very difficult to obtain a complete house, upon any rent, for such a purpose.

To explain this observation, I must beg leave to repeat a circumstance, which I have stated in my last volume of Medical Essays. Previous to the building of our Dispensary, when a patient happened to be seized with an infectious fever in the Infirmary, the disease was apt to spread to an alarming degree, so as to require a general dismission of the patients. But since a few rooms have been added to the Dispensary, for the purpose of secluding persons thus attacked, from the rest of the patients, though bad fevers have been accidentally introduced, yet by removing the patients, on the first

first attack, into the fever-ward, the disease has always been prevented from extending, without the necessity of dismissing a single patient. In like manner, I conceive, that by building a fever-ward in each of the Infirmary districts, and removing into them the worst cases from the worst houses, the progress of infection would be materially checked, and a great quantity of disease and mortality would annually be prevented. This plan would also give additional success, to the labours of the Infirmary physicians. It would add the chances arising from cleanliness, free ventilation, and careful nursing, to the efficacy of medicines.

4. In a separate building, the access of unnecessary visitors would be better prevented. It may give the committee a clearer idea of the extent of this danger, to mention, that an elderly woman, just recovering from the fever, informed me, that she had fifteen children, all settled in the town, and all of whom had

undergone

undergone the fever within these two months.

In a building of this nature, it would be highly useful to have woollen dresses for convalescents, or persons belonging to removed families, that the clothes of the infected may be purified by stoving, or scouring. Shoe-baths would also be required for medical purposes, as well as for cleanliness.

It would be greatly to the advantage of the manufacturing poor, if the custom of wearing flannel next the skin were introduced among them. It would counteract, in many instances, the bad effects of cold and dampness, and would prevent many fevers and rheumatic affections. More frequent changes of apparel, which conduce to health as well as to luxury, might perhaps be procured to the poor, by encouraging the establishment of clothes-clubs, which some of them have begun to form among themselves.

In

In manufacturing towns, the attention of the poor is diverted from cleanliness, by the value of their time. To wash the linen of a large family appears hard labour, to a woman who can earn a subsistence by different employment. The mother of a family is, therefore, easily induced to let her children become very dirty, by the temptation of gaining money in a manufactory. Perhaps the distribution of pecuniary rewards to mothers, whose children shall be sent clean to the different manufactories, would produce a good effect.

What I now propose to the committee, can only be regarded as a measure palliative of the most urgent evils, for the best method of furnishing the poor with healthy habitations, which should effectually stifle the germs of infection, would be that of erecting small houses, at the public expence, on the plan of barracks, or cazerns, to be let at small rents, or gratuitously, according to the circumstances of the persons applying.

At

At present, perhaps, it would be most expedient for the committee, to try the effect of a single fever-ward, in some quarter of the town where infection more frequently prevails. In a town like this, such buildings can never become entirely useless, even if the plans of the committee should extend to the length, at which I have hinted. The want of proper sewers, in several of the streets, and the offal of slaughter-houses, left to putrefy before the doors in several places, are nuisances which deserve the serious attention of the committee.

3. On the subject of the propagation of infection in cotton-mills, it may be necessary to observe, that although it has been supposed, that fever may be imported in the cotton; and though this opinion does not seem improbable in itself, yet no direct proof of fevers originating from this source has ever been obtained. On the appearance of the present epidemic at Ashton, an alarm of this kind was spread, because the fever broke

broke out in the picker's room of a manufactory there; but I am informed, from very respectable authority, that the infection was actually carried thither from Manchester, by a girl, who went to be employed as a picker at Ashton. I apprehend that the mischief arising from some cotton mills, as they are at present managed, results from,

I. The custom of working all night;

II. Negligence in washing the floors and frames;

III. Negligence respecting the personal cleanliness of the work-people, and especially of the children;

IV. Imprudence in permitting convalescents, or persons coming from infected houses, to resume their work, with their clothes saturated with infection;

V. Want of proper ventilation, particularly

ticularly during the night-labour, when the air of the room is rendered additionally impure by the candles.

With regard to the three first articles, I am uncertain how far the committee could with propriety interfere. If the proprietors and overseers of manufactories could be interested in the views of the committee, very advantageous regulations might be formed.

The custom of working all night totally frustrates every attempt to ventilate the mills thoroughly; while the dirtiness of the persons employed, renders them more disposed to receive the infection of fever. This custom should, if possible, be discontinued.*

The other circumstances might be easily regulated by the overseers, who would perhaps be induced to pay more attention to them, if premiums were held out to overseers, who preserved a given

* See the second volume of these Essays for farther observations on the subject, p. 197.

given degree of health, among the persons under their care.

The remonstrances of so respectable a body, as a committee of this nature, may also be expected to have a proper influence, when they call the attention of the proprietors of manufactories, to practices evidently destructive of health and life.

The great difference in the healthiness of different cotton-mills, which it would be invidious to point out here, but which may be easily learnt from the lists of home-patients, kept at the Infirmary, for the last five years, sufficiently proves the benefits of care, respecting the circumstances I have mentioned, and the danger of inattention.

The re-admission of convalescents into manufactories, while they are in a state capable of infecting others, is an obvious cause of encreasing, and perpetuating fevers. To prevent this, it would be

be proper to retain patients in the fever-wards, till their clothes and persons should be sufficiently purified, and to caution the overseers of manufactories, against the reception of irregular patients, who might return to their employment, without leave from their physician.

A similar hazard, which arises from incautious visits to the sick, may be most effectually counteracted by regulations in the fever-wards. It would be cruelty to refuse access to near relations, in dangerous cases, but they might be taught to lessen the danger of receiving infection, by placing themselves between the patient's bed and the window, by averting the face while the patient speaks, and by carefully avoiding to sit down upon the bed.

All linen belonging to the patients, should be washed in the fever-wards, for the same reason.

The

The practice of smoaking tobacco has been sometimes recommended, as preventive of infection: whatever may be the effect of the herb, properly prepared, I am confident that the acrid, irritating composition, used by labouring people, is more likely to excite than to prevent disease; and I am persuaded, that I have seen complaints in the stomach and bowels, repeatedly occasioned by its use.

It would be very useful, if, among other important rules, contained in the report of the physicians respecting cotton-mills, published in 1784, that concerning the burial of the dead could be enforced. ‘That the bodies of such as die of the disorder should be wrapped in pitched linen, and buried as soon as decency and propriety will permit.’

I have often seen interment unreasonably delayed, to the great annoyance of the survivors, and even of the neighbourhood.

The

The propriety of removing home-patients into the fever-wards, should be determined by the physician of the district; but as the system of the Infirmary is already very complex, I think all applications to the committee should come from the recommenders. Every kind of charitable relief administered to the sick, should be procured in the same manner; for we have found by the experience of last year, that when the faculty at the Infirmary are known to distribute money or other necessaries, the charity becomes oppressed by false claims, which intercept the expenditure and attention, due to real sickness.

The obvious extension of the cares of the committee, to a superintendance of the morals of the poor, as intimately connected with the preservation of their health, comprehends a variety of most important objects, which cannot be obtained, without application to the legislature of the country. Whenever that shall be deemed proper, it will afford me

me the greatest satisfaction, to communicate any remarks, which my professional intercourse with the sick poor has enabled me to make.

I have the honour to be,
gentlemen,
your very obedient servant,

J. FERRIAR.

Dawson-street,
Jan. 4, 1796.

It appeared to the board, that the most urgent object of attention, was the frequency of infectious fever; in consequence of which, resolutions were adopted, for establishing fever-wards, on the principles which I had laid down. A committee was then appointed, to fix on a proper situation for the purpose, and to form regulations for the conduct of the establishment.

That the nature of the rules may be better understood, it may be necessary to mention, that poor persons, ill of fevers,

vers, or other acute diseases, upon being recommended by a trustee of the Infirmary, are visited by the physicians at their own houses, within certain limits, under the denomination of home-patients. As the expence of furnishing medicines and wine, for this class of patients, was already undertaken by the Infirmary, the committee had only to provide a place for their reception, and to supply them with food and attendants.

The committee, after some deliberation, fixed upon four small, adjoining houses, situated without the wall of the Infirmary, and detached from other buildings. The medical gentlemen of the Infirmary expressed their opinion, that those houses might be fitted up in such a manner, that they might accommodate the necessary number of patients. It was calculated, that the expence of altering the apartments, and of furnishing them, would amount to 200 pounds, and that the annual expenditure,

ture, including house-rent, would be nearly 400 l. So moderate were the funds, with which we proposed to lessen the ravages of fever, in this great and populous town, where I have known upwards of three hundred fever-patients, at one time, on the Infirmary-list.

The calculation of the annual expenditure was founded on one, which had been made by Mr. Philips, the very active and intelligent Treasurer of our Infirmary, from the expences incurred, by the removal of two patients into the fever-ward, attached to the Infirmary, which I have mentioned before. The experience of seventeen months, which have intervened since the opening of the present fever-wards, has proved this calculation to be accurate. It was supposed that there would be fifteen patients, upon an average, in the wards, during the course of the year. The liberality of the town afforded a subscription, abundantly sufficient for the first demands of the establishment.

By opening communications among the upper rooms of the four houses, four large wards were formed, and each of the front rooms below being capable of containing two beds, we were enabled to accommodate twenty-eight patients conveniently: the following regulations were now drawn up by me, at the request of the committee, for the reception of patients.

Internal Regulations for the House of Recovery.

I. Every patient on admission, shall change his infectious, for clean linen; the face and hands shall be washed clean with lukewarm water, and the lower extremities fomented.

II. The clothes brought into the house by patients, shall be properly purified and aired.

III. All linen and bed-clothes, immediately on being removed, from the bodies

dies of the patients, shall be immersed in cold water, before they are carried down stairs.

IV. All discharges from the patients shall be removed from the wards, without delay.

V. The floors of the wards shall be carefully washed twice a week, and near the beds every day.

VI. Fumigations with nitre and concentrated vitriolic acid, which have been lately employed with such success in his Majesty's military and naval hospitals, as an antidote to contagion, shall be used, according to the directions of Dr. Smyth, twice daily in all the wards of the House of Recovery. The walls shall be frequently washed with quick-lime, fresh slaked in water, and whilst it continues bubbling and hot.

VII. No relation or acquaintance shall be permitted to visit the wards, without

a written

a written order from one of the physicians.

VIII. No strangers shall be admitted into the wards; and the nurses shall be strictly enjoined not to receive unnecessary visits.

IX. No linen or clothes shall be removed from the House of Recovery, till they have been washed, aired, and freed from infection.

X. No convalescents shall be discharged from the house, without a consultation of the physicians.

XI. The nurses and servants of the house shall have no direct communication with the Infirmary; but shall receive the medicines, in the room already appropriated to messengers from the home-patients.

XII. The committee of the Strangers' Friend Society shall be requested to un-

dertake

dertake the office of inspecting the House of Recovery.

XIII. A weekly report of the patients admitted and discharged, shall be published in the Manchester news-papers.

XIV. When a patient dies in the wards, the body shall be removed as soon as possible, into a room appropriated to that use; it shall then be wrapt in a pitched cloth, and the friends shall be desired to proceed to the interment, as early as is consistent with propriety.

XV. All provisions and attendance for the patients in the House of Recovery, shall be provided from the funds of this institution, without any communication with the Infirmary.

The rooms on the ground-floor were appropriated to the servants, and the convalescents. The establishment of servants, consisted of a head-nurse, who was expected to superintend the domes-

tic

tic concerns of the house, and three ordinary nurses, a number supposed to be equal to the general exigencies of the institution. On emergencies, it was proposed to hire occasional nurses, while the temporary pressure might render their assistance necessary. The wards were furnished with iron bedsteads, without curtains, and with ticks filled with straw, which was changed at proper periods.

The mode of removing the sick from their own dwellings, adopted by the committee, was that of conveying them in a sedan-chair, purchased for the use of the fever-ward, and kept in the outbuilding, for that sole purpose.

Part of a vacant piece of ground, adjoining to the houses, was enclosed with a wall, for the purpose of washing and airing the clothes of the patients.

In this state, the institution was opened, May 27th, 1796, under the denomination

of

of the *House of Recovery*, a name which some members of the committee supposed would be less alarming to the feelings of the poor, than that of *Fever-ward*. Some reluctance was apprehended on the part of the patients, from the example of Ashton, but I experienced very little of it among the first objects whom I selected, and as soon as the nature of the institution became understood, by the report of those who were discharged, it acquired universal popularity among the poor.

At the opening of the *House of Recovery*, though fevers were not remarkably prevalent in Manchester, the weekly list of home-patients was rather encreasing. In a few weeks, it was reduced to one half of the usual number, and it has never since risen to the former height, notwithstanding the addition of a new class of patients, which I shall soon mention. The most satisfactory evidence on this subject, is afforded in the following report,

port, from the Weekly Board of the Infirmary.

"The Weekly Boards having observed with great satisfaction, the remarkable diminution of the number of home-patients, in the lists laid before them every Monday, since the opening of the HOUSE OF RECOVERY in May last:—This Board thinks it may be proper to inform the public, that cases of Fever, in particular, have been still less frequent than might be supposed from a cursory inspection of the lists. It is obvious that the number of home-patients weekly admitted, is not, upon an average, more than half the number admitted previous to the opening of the HOUSE OF RECOVERY; but it appears from an inspection of the physician's books, that the proportion of fever-patients, out of the whole number of patients, is much smaller than formerly: thus, on comparing the home-patients, admitted in January 1796, with those of the last month, it appears that in January 1796, the

the whole number of home-patients was 296, out of which 226 were cases of fever; but in January 1797, notwithstanding the severity of the season, the number of home-patients was only 161, out of which 57 were ill of fevers.

It must be farther considered, that for several months past, the BOARD OF HEALTH has agreed to admit patients in fevers, to the HOUSE OF RECOVERY, from beyond the districts, and *one third* at least of the number which appears on the books must be accounted for from this regulation, by which the environs of the town are cleared from epidemic fever. Making the deduction of this extraordinary class of patients, it is evident that the frequency of fevers has been reduced in a surprising degree.

Another important consideration, which suggests itself to the observation of the Board, is, that during the great alarm and distress, occasioned by epidemic fevers, the claims of patients labouring

bouring under them supersede almost all others on the attention of the Trustees; so that scarcely any other cases of disease have been admitted at such times.

Those who will take the trouble of looking over the lists of diseases in the Physician's books, will be greatly struck with the difference, on seeing the variety of complaints entered within the last half year. Thus the benefits of the charity are more equally extended, than when the Infirmary and the town were oppressed by the enormous croud of fever-patients, which was pouring in upon them, before the means of removing fever-patients were provided."

It was soon found, that the removal of patients, residing within the Infirmary districts, was but a partial measure for checking the progress of fever. Many narrow and crouded streets had been excepted from the visits of the physicians,

cians, on account of their distance, or had arisen beyond the appointed limits, during the rapid encrease of the town, previous to the war. It was impossible to cut off the communication between infected persons, situated beyond the districts, and their connexions within them, especially as the division, in some streets, which extend in a straggling manner into the country, is an imaginary line. Those extremities, therefore, remained, as nurseries of the disease, and it became absolutely necessary to remove patients into the House of Recovery, from any distance, whence they could be conveyed in the sedan.* In adopting this resolution, the committee had to consider, that by the rules of

* As the physicians of the Infirmary cannot visit patients thus circumstanced, intelligence respecting the nature of the complaint is obtained, either by means of some medical practitioner, who has seen the patient, in the first instance, or from the physician's clerk, when the distance is not great, or by good information from the neighbourhood. There is little room for deception. The hardiest vagrant would shudder at the idea of entering a fever-ward, when affected with any other disease than a fever.

of the Infirmary, no medicines could be dispensed from that charity to patients thus circumstanced. They, therefore, agreed to indemnify the Infirmary, if required, for the expences incurred, by introducing patients from beyond the limits; but the general saving to the Infirmary has proved so considerable, by the diminution of fever-patients, that, I believe no demand of this kind has ever been made upon the Board of Health.

Not long after the opening of the House, I had a strong proof of its salutary effects. I was requested by the proprietors of a large cotton-mill, within a mile of Manchester, to inspect the state of the persons in their employment, and to examine into the circumstances which had produced an epidemic fever among them. Nothing appeared in the factory itself which could occasion disease, but when I came to examine the adjoining village, in which the people resided, it was evident that causes of fever, similar to those which operated

ed in Manchester, subsisted there. Several dirty families, who had contrived to make even new houses offensive, received lodgers, without regard to convenience in their accommodation; cellars were inhabited; and almost every house was over-crouded. The existence of infectious fever, which now appeared for the first time among them, was traced to the settling of a family in the village, who had suffered much from the typhus in Manchester, and who had probably carried with them infected clothes or furniture, as one of them was only in a state of convalescence at the time of their removal. I immediately caused several patients to be carried into the House of Recovery, and recommended that the lodging-houses should be cleared of their superfluous inhabitants, that the vapour of the nitric acid should be extricated in them, and that some families, who seemed incurably dirty from long habit, should be dismiss- from the place. These proceedings checked the progress of the disease for

some

some days, but as one or two patients had objected to their removal to the fever-ward, it broke out again, and I was obliged to order eight patients, in different stages of fever, to be removed in one day. The situation of two of these was deplorable. Their parents had been swept off by the disease, and as great terror prevailed in the neighbourhood, these little wretches were left, unknown to the proprietors, almost destitute of every thing. One of them died from the effects of previous hunger, very soon after its reception into the House of Recovery.

Since this second removal of patients, the village has been perfectly healthy, during nine or ten months.

It is none of the least advantages consequent on this institution, that the owners of cotton-mills have been instigated, by the facts brought before them, to pay a more scrupulous regard to the health of their work-people. The build-

ings

ings are in general kept cleaner, and are better ventilated than formerly, and in most of the large cotton-mills, the persons employed are not exposed to more numerous causes of disease, than any other class of labourers, excepting in the process of *mule-spinning*. There, indeed, it happens unfortunately, that the work-people fancy an extraordinary degree of heat to be necessary, which, when accumulated in close rooms, whither it is conducted by flues, proves highly injurious to health. But this is the error of the servants, not of the masters, some of whom shew great anxiety to correct it.

I can also perceive, that a salutary impression has been made on the minds of the poor, respecting the utility of cleanness in their houses. The idea of fever comprehends, among them, that of ruin to their circumstances, and desertion by their neighbours: it may, therefore, be expected, that they will catch at every means within their reach

to

to avoid so dreadful an evil. When they find that a public charity extends its care for them so far, as to white-wash their houses, when the physicians report it to be necessary, they must feel the propriety of attending more to this object.

It is true, that many causes of fever, and other disorders remain yet untouched by this institution. To render the labouring part of the community more healthy, no method will be sufficient, but that of providing public lodging-houses, well-regulated, for their accommodation. This would be a very arduous task, yet I am not without hopes that it may, at some future period, be accomplished.

The reader may have observed, that I had proposed to establish fever-wards in different parts of the town, in the paper laid before the committee; this appeared, at first sight, to be the easiest method of disposing of the patients; but from

from our experience of the present plan, I am persuaded that every purpose may be answered, by removing patients to the present situation. It may, and it probably will become requisite, to enlarge the present buildings. The accommodations are sufficient for the extent of the town at this time, but upon the revival of trade, and a consequent accession of new inhabitants, epidemics may occur, in which it may be necessary to provide beds for a more considerable number of patients. A building capable of containing fifty patients, would probably be adequate to every emergency. Some rooms ought to be set apart, for the occasional reception of patients affected with Scarlatina Anginosa, which makes dreadful havock, when it rages among the poor, and for admitting patients in measles and small-pox. The latter is a disease particularly destructive, among the lower class of inhabitants here, as they entertain strong prejudices against the practice of inoculation, though the benefits

benefits of it are offered to them twice a-year, at the Infirmary.

The success of the practice in the House of Recovery, has been very considerable. The following extracts from the last report of the Board of Health, will shew, as clearly as I could offer it to the reader, what have been the advantages attending the institution.

"COMPARISON *of the* Number *of* Patients *ill of* Fever, *admitted on the* Physician's Books * *at the* Infirmary, *at different periods, in Portland-street, Silver-street, and the other streets in that pile of buildings, in the neighbourhood of the* House of Recovery.

From

* When a home-patient, has been recommended, and has been visited by a physician, his name, place of residence, age, the name of his disease, and that of the recommender, are entered in the books kept by the physicians' clerk; the number of prescriptions, and the event of the disease, with the dates of the admission and discharge, are likewise registered in them, with the greatest regularity: so that they afford authentic information, respecting those subjects.

From September 20, 1793, to May 20, 1794, (a period of *eight months*, selected on account of the usual prevalence of fever) number of fever-patients in these streets, 400.

From September 20, 1794, to May 1795, number of fever-patients in these streets, 389.

From September 20, 1795, to May 20, 1796, number of fever-patients in these streets, 267.

From July 13, 1796, to March 13, 1797 (being a period of *eight months* since the opening of the House of Recovery), number of fever-patients in these streets, 25.

In July last, five.

In August last, one.

In September last, none.

From

From the 4th to the 23d. of February last, two.

The bills of mortality for 1796 shew, that there has been a decrease in the burials, amounting nearly to 400.*

From the opening of the House of Recovery on the 19th of May, 1796, to February 3d, 1798, 623 patients have been admitted: of these 53 have died; 15 remain in the house. The number of deaths, since the beginning of May, 1797, to Feb. 3, 1798, has been only 13, though the House has been generally full, during the whole period. The most striking proof of the benefit which the public derive from this institution, results from observing the diminution in the number of the home-patients of the Infirmary: the number of home-patients, from June 1795, to June, 1796, was 2880; from

* "On referring to the physician's books this day, July 30th, 1797, it appears that there has been only one fever-patient in these streets, during the last three months."

from June, 1796, (immediately after the opening of the House of Recovery,) to June, 1797, the number of home-patients was 1759; that is, the illness of 1121 persons has probably been prevented by this institution, in one year; for the home-patient's list has generally encreased every year.

To this I can add, that when we were threatened with a return of the epidemic, one hundred and forty-nine persons were received into the House of Recovery, from the beginning of May, 1797, to the beginning of October, and of these, four only died, though, in many instances, the dangerous nature of the fever was the motive for removing the patient.

But many of these facts, and the arguments in favour of such institutions, have been so ably stated by Dr. CURRIE, of Liverpool, in his late publication, that it is unnecessary for me to proceed farther on this part of the subject.

The

The situation of our House of Recovery, is particularly favourable to a more frequent attendance on the patients, most of whom it was previously impossible to visit more than once a-day, while they were dispersed through all parts of a great town. In dangerous cases, they are now visited twice or thrice a-day, and are furnished with night-watchers; in a word, every efficient attention is paid to the poorest, and most friendless objects in our wards, which money and influence can procure for the most opulent individual.

The number of cures effected in the House of Recovery, must be principally ascribed to the attendance, and the comforts experienced by the patients. A clean bed, a quiet ward, an attentive nurse, and the frequent visits of the physician, are so many medicines to a poor creature, who has been languishing in a cold, damp cellar, or in a garret exposed to the injuries of the weather, amidst the neglect and confusion of a

wretched

wretched family, clamorous from hunger, or brutal from debauchery.

In the practice of the House there is nothing peculiar, excepting the use of cold bathing, which I introduced among the home-patients in 1791, and which I have employed very successfully in the fever-wards. I have not used it in the first days of fever, as danger is frequently to be apprehended from the tendency to congestion, particularly in the head. Perhaps the scrophulous constitution of a large manufacturing town, may render suppuration in the brain more frequent, in situations resembling ours. The severe cough, which so often attends our synochus and typhus, from their first appearance, also strongly contra-indicates this practice with us, at the beginning of the disease.* But when the fever runs on

* I observe with great satisfaction, that Dr. Currie's experience of this remedy, and my own, illustrate each other. He has clearly established its utility at the first accession of fever; and I have found it invariably safe and salutary in the more advanced state of the disease, when

on to a great length, without any particular affection of the head or lungs, when common stimulants lose their effect, and when the extreme debility of the patient takes away all hope of restoring him by ordinary means, I find the cold bath eminently serviceable. Among the home-patients, I was frequently under the necessity of employing simple ablution with cold water, from the want of conveniences: in the House of Recovery we use the slipper-bath, and immerse the patient. I have never known any injurious effect produced; on the contrary, patients have often declared, that they felt themselves agreeably refreshed by it. In some cases, where great stupor accompanied the other bad symptoms, and where I was not without suspicions respecting the state of the brain, I have yet ventured on the use of the cold bath, after applying

when he generally declined employing it. Perhaps, from difference in situation and employments, there may be more tendency to partial congestion, in our epidemic, than in that of Liverpool.

applying leeches, or cupping-glasses, to the temples, and I have had the satisfaction of seeing the patient recover, from a state little short of death. Immersion generally brings on very quiet and salutary sleep, in the course of an hour or two. One of my patients, in whom the effects of the bath appeared to go off towards evening, was bathed twice a-day. The patients' drink is commonly administered cold.

In cases of typhus, which begin with diarrhœa, when the stomach becomes so irritable as to reject medicines, wine, and other kinds of sustenance, I depend on repeated doses of opium in substance, sometimes combined with aromatics, frequently given alone. I have cured several cases of this kind, when the fever run on for four or five weeks, without giving a single dose of bark. In these circumstances, when there is no fixed pain in the bowels, I join the use of the cold bath with that of opium, with great advantage. Astringent

tringent glisters, administered cold, have a powerful effect in checking febrile diarrhœa. In one case, when large quantities of laudanum thrown up, combined with strong astringents, were instantly returned, and small loose stools were discharged almost every half hour, I directed three ounces of a strong decoction of galls to be injected cold; the effect was, that the patient had no return of diarrhœa for four hours, and then parted with a figured stool. The nausea, which is always a formidable symptom, may sometimes be relieved by giving, repeatedly, small quantities of milk and water; in general, it yields to the use of opium, and burnt brandy. I find, that obstinate costiveness, which sometimes becomes as troublesome as the opposite state of the bowels, is best relieved by calomel. Five or six grains commonly operate very gently with an adult, in this state.

When patients are admitted into the House, a flannel dress is provided for them

them, and their own clothes are carried into the yard, to be washed, scoured, or ventilated. During their convalescence, they wear the dress of the house; which consists of a jacket and trowsers for the men, and of a wrapping gown and petticoat for the women. At the time of discharging patients, their own clothes are returned to them perfectly clean, and they rejoin their families, and resume their occupations, without the hazard of communicating infection to others.

Institutions of this nature are particularly adapted to manufacturing towns, but, I believe, there is not a town in the kingdom, containing four thousand inhabitants, which would not be greatly benefited by similar establishments. Abuses and errors prevail every where among the lower classes of society, which require both instruction and assistance from the more enlightened. Much misery, much actual suffering, are unavoidable in all states of society, yet when

when the important interests of the poor are properly watched over, their calamities admit of great alleviation. The facts detailed in this paper have been collected, to shew by how simple a method, and with how slight an expence, one of the chief scourges of mankind may be disarmed of a great part of its terrors. Other towns, I trust, will perceive it to be their interest to adopt measures of the same kind.* Reliance may be placed on our experience here, for I have been less desirous to celebrate the triumph of art, than that of humanity.

* In April last, I was requested, by several of my friends in Stockport, to furnish a plan for establishing a fever-ward in that populous town. The design has been pursued with great spirit, and a sum has been raised, sufficient to enable the Trustees to erect a building for the purpose. The same general causes of fever exist in Stockport, which render the disease so common in this town.

AN AFFECTION of the LYMPHATIC VESSELS, hitherto misunderstood.

OF AN AFFECTION OF THE LYMPHATIC VESSELS, HITHERTO MISUNDERSTOOD.

It has been long known, that irritation may be propagated along a lymphatic vessel, from its extremity, to its entrance into one of the larger conglobate glands. The vessel can be distinctly traced in its course, by its hardness and enlargement, and frequently by a slight inflammation of the superincumbent skin, forming a red, or purple streak, and extending with the affection of the vessel. But practitioners do not seem to be aware, that all the lymphatics of a large limb may take on a disposition to inflammation, from internal causes, though such an occurrence might have been expected, *a priori*. The following case

case appears to me to demonstrate this fact, and to furnish an explanation of cases, which have been described, but I think not well understood, by former writers. It will serve, also, if my view of it be correct, to direct our practice, in circumstances where little has yet been attempted.

A gentleman of an irritable habit, subject to severe bilious attacks, to hæmorrhoidal discharges, and sometimes to a considerable degree of rheumatism, was affected with pain, stiffness, and swelling, in the left leg and thigh. The pain and swelling began in the foot, and extended up to the groin. When I saw him, the swelling was uniform, tense, and shining, without discolouration of the skin. Upon applying my hand, I felt great hardness and enlargement in the glands of the groin, and in those of the ham; the patient complained most of pain in the ham. The vessels could be felt much enlarged and hardened, for a little way above the ham, but the extreme

treme tension of the skin prevented me from tracing them to any considerable distance.

A bilious fit had preceded this attack, and the stomach was still weak, full of flatulence, and easily excited to vomiting. The patient had also been exposed to the action of cold and moisture.

About two years before, this patient had undergone a variety of complaints, arising from an accumulation of bile, and had discharged a considerable quantity of hæmorrhoidal blood. After this, the left arm had become swelled and painful, but not to a degree equal to the disorder which I have described. The disease in the arm was at that time removed, by the application of a blister below the elbow-joint. After the disappearance of the swelling, an acute pain in the right side supervened, accompanied with tension of the abdomen, and obstinate costiveness. These symptoms continued with great severity, during

 three

three days, and were carried off by the brisk action of senna and rochelle salt.

In considering the affection of the leg and thigh, I conceived that there were sufficient marks, to indicate a general inflammatory state of the absorbents of the limb. Those symptoms, from which we conclude a single lymphatic to be inflamed, were distinguishable in all the superficial lymphatics, and in the conglobate glands of the part. I determined, therefore, to try the effect of topical bleeding, and I directed several leeches to be applied to the leg, just under the knee, as the pain and stiffness were most considerable in the ham. Almost immediate relief was obtained from the action of the leeches. Next day, there was an evident decrease of the swelling, and I could distinctly trace the superficial lymphatics, entwisted like bundles of cord, through the whole course of the limb. The inguinal glands on the left side were still much enlarged, and very painful, but the affection seemed to stop there,

there, for no pain or distention was felt in the abdomen.

The disease gradually lessened from day to day, while the patient's bowels were kept open by gentle cathartics, and in the course of a week or two, little inconvenience remained.

When I first apprehended the nature of the complaint, I felt great anxiety, lest the inflammation should extend to the absorbents in the internal cavities. Fortunately, the inflammation of the inguinal glands stopped the extension of the disease. This event may be accounted for, on two different suppositions. The severe irritation of those glands might extinguish the degree of inflammation, previously subsisting in the vessels, as a blister applied to the skin would have done; or the inflammatory disposition might be exhausted, by its extension to the inguinal glands, and by the violence of its action upon them. The latter supposition appears more

more probable; for the inflammation of the glands in the ham, though very considerable, did not terminate, however it might lessen the affection of the vessels; and we know, from the effects of wounds of the absorbents, that the vessels themselves are generally incapable of secreting pus, or of producing inflammatory exsudation, though the conglobate glands suppurate, like other vascular parts.

The tense swelling of the limb, clearly marked the distinction between the class of vessels affected, and those of the sanguiferous system. The absorbents were rendered incapable of performing their functions, by the thickening of the vessels, and the obstruction of the glands; but the arteries being in a sound state, the exhalents continued to pour out their fluid, which, not being absorbed, must stagnate in the cellular membrane. The theory and the fact accord perfectly with each other. The difference between this state of accumulation, and that of common dropsy, seems

to be this, that when the lymphatics are generally inflamed, absorption ceases entirely, for the time; but that in cases of œdema, or anasarca, absorption goes on, though imperfectly, while there is any vigour in the habit. At length, absorption is stopped, in dropsical cases, and the integuments give way; but before this event takes place, I have generally found the swellings assume the tense, shining appearance, accompanying the lymphatic inflammation.

It is impossible to avoid indulging some reflections, upon an occurrence which seems to open new views in pathology. Our recent acquaintance with the absorbent system, has inspired a just diffidence, respecting its general influence on the doctrine of disease; and the care taken to discriminate the functions of this system from those of the heart and arteries, has, perhaps, occasioned a belief, that they have fewer properties in common than farther observation will ascertain.

The

The case, which I have detailed, appears, in some respects, to meet Dr. Latham's ideas on the subject of rheumatism, and if it were allowable to dedominate a *species* from a solitary fact, this might be called *Lymphatic Rheumatism*. But this very fact shews, that inflammation of the lymphatics produces very different symptoms, from inflammation of the muscular fibre, which constitutes acute rheumatism, and of which the existence has been ascertained by dissections. The pain, in lymphatic inflammation, is referred to the enlarged glands, and is not remarkably encreased by motion; there is more stiffness than actual pain throughout the limb; the swelling is general, and the skin is not discoloured. But although acute rheumatism sometimes affects the greater part of the external muscles, it occasionally appears in a very limited sphere. A single muscle may be attacked by it, independently of the others. I once saw it confined to the belly of the biceps muscle, of the arm.

Perhaps

Perhaps this observation may serve to elucidate the curious cases of limited muscular pain, which Mr. HOME has given in the Croonian Lecture. Much, indeed, must be allowed for the state of debility, under which some of his patients seem to have laboured. I remember, that when recovering from a severe typhus, about eighteen years ago, if I happened to stretch my arm or leg, inadvertently, to the full extent, an acute pain was produced in all the muscles employed in the action, though in ordinary motion, there was no uneasiness felt in any of the limbs.

I see no reason for supposing, that this affection is necessarily confined to the extremities, particularly to the lower limbs. The causes which produce inflammation of the lymphatics in one part of the body, may occasion it in the same order of vessels, when applied to them in any other part of the body. One circumstance, indeed, must be admitted, to render the extremities more frequent-

ly

ly liable to such an attack. The great number, and the size of the superficial lymphatics in the extremities, particularly in the lower, may encrease the probability of their undergoing this affection. I suspect, that it is a disease not unfrequent in irritable habits; but that hitherto, the enlargement of the glands, and the general swelling, have drawn off the attention of practitioners from the situation of the vessels. What symptoms attend inflammation of the absorbents, in the cavities, we are yet to learn, unless, as I suspect, the complaint mentioned in p. 97, proceeded from this cause. It is not impossible, that encysted dropsies may arise from complaints of this nature. Ascites is sometimes preceded by internal pains, which are vaguely referred to the stomach. The inflammatory disposition may be fully exhausted, among the numerous glands of the mesentery, without extending to those of the groin; and the slowness with which the swelling disappears, affords sufficient proof, that the absor-

bents do not readily resume their functions, after the inflammation has subsided.

It is also not improbable, that in different degrees, and under circumstances somewhat different, affections of this class may lay the foundation for scirrhus in the mesenteric glands, and for atrophy. The inflammation of the lymphatics does not seem, in its first tendency, very dangerous. By the pain which it produces, it stimulates the arterial system, and a farther cause of irritation may be found in the accumulation of the fluid effused by the exhalents; but, independently of these circumstances, there does not appear to have been any direct sympathy between the sanguiferous and the absorbent systems, in this instance. Yet the absorbents are known to assume an inflammatory disposition, in consequence of diseases in vascular parts. The irritation of a chancre, or the excoriation of the glans, by the discharge in gonorrhæa, will inflame the lymphatic

lymphatic vessels, and even the glands in the groin. It has occurred to me, that the view which I have taken of this subject, may explain a singular fact, which has not yet been satisfactorily accounted for. It frequently happens, that in a virulent gonorrhæa, the surface of the glans becomes completely raw, and is constantly covered with the infectious discharge, yet the habit is not infected, though the disease continues for several weeks, and though mercury is used sparingly, or not at all. In these cases, I believe it uniformly happens, that the lymphatics on the sides of the penis inflame, become hard and enlarged, and that there is a painful enlargement of the inguinal glands, on one or both sides. It seems probable, that in consequence of their being thus affected, the vessels lose their power of absorbing, and that the noxious matter is denied admittance into the system. This may be one of those regulations of Providence, (which physicians have thought proper to call the αυτοκρατεια) for preventing

ing the introduction of poisons into the circulating system.

In the case of chancre, when the ulceration has once taken place, infection is unavoidable, because by the laws of the system, every ulcerated surface is an absorbing one.

By the theory which I have suggested, several problems in the history of venereal complaints may be resolved. If absorption of the contagious matter be prevented, by the inflammation of the absorbent vessels, and by inflammation propagated to the glands from those vessels, it will be easy to conceive, that infection of the habit will not take place under such circumstances; that mercury may exert an action unfavourable to the disease of the lymphatics; that the pus secreted by the suppurated glands may not be capable of communicating a specific disease; and that in buboes, thus produced, the process of healing may be as slow, as in any scrophulous abscess.

The

The lymphatic system appears to be particularly affected in the plague. Enlargement, and painful induration of the conglobate glands in the groin, or arm-pit, seem, from Dr. Russel's account, to rank among the most certain diagnostics of the complaint. This is a subject of great curiosity and interest, but having never seen the disease, I do not feel myself qualified to discuss it. From Dr. Russel's description it would seem, that in certain cases of plague, many of the superficial lymphatic glands, dispersed over different parts of the surface of the body, become affected.

A disease, resembling this which I have described, in almost every symptom, has been mentioned by several writers on midwifery. They have supposed it to be peculiar to women in the puerperal state, and while they have differed in their opinions respecting its causes, they have agreed in referring it to circumstances exclusively connected with parturition. The general

ral idea to be collected of this disorder, from Mr. White's Treatise* on it, is, that "about twelve or fifteen days after delivery, the patient is seized with great pain in the groin of one side; accompanied with considerable fever.—The part soon becomes affected with swelling and tension, which extend to the labium pudendi of the same side only, and down the inside of the thigh, to the ham, the leg, the foot, and the whole limb; and the progress of the swelling is so quick, that in a day or two, the limb becomes twice the size of the other, and is moved with great difficulty, is hot and exquisitely tender, but not attended with external inflammation.—It (the swelling) is very smooth, shining, and pale, and even and equal to the touch in every part, except where the conglobate glands are situated, which, in some cases are knotty and hard, as in the groin, the ham,

* An Enquiry into the Nature and Cause of that Swelling in one or both of the Lower Extremities, which sometimes happens to Lying-in Women, p. 7 et seq.

ham, and about the middle of the leg, at its back part."

The only points of difference between this abstract, and my account, are, that in my case, the swelling began at the foot, and that the enlargement of the absorbent vessels did not occur to Mr. White, as indeed it is not distinguishable till the swelling abates considerably, and, in some cases, can hardly be felt at all. Mr. White has laid particular weight on the commencement of the swelling at the groin, because he has made that fact the basis of his theory; and from his general accuracy, I have no doubt that such was the progress of the swelling, in the cases which fell under his own observation. But it is not invariably the course of the disease. Mr. Simmons informs me, that he has seen it confined to the calf of one leg, after delivery, where the swelling had not affected the foot, and did not extend above the knee; and in a very remarkable case, which I shall mention afterwards, the swelling began also

also at the distant extremity of the limb. These facts prove clearly, that the disease may be produced, without the rupture of a lymphatic in the groin, which Mr. White imagines to be effected, by the pressure of the child's head against the brim of the pelvis, during labour; a supposition very questionable in itself, even if there were no direct facts subversive of his opinion. The theory which I have proposed, is liable to no difficulties, and indeed the proof of inflammation is so evident, that Mr. White is obliged to admit that it happens in the first stage of the complaint,* but he declares, that "this inflammation is not the original disease; but a symptom only, occasioned by the distension of the lymphatic vessels and glands." Why should the lymphatic vessels and glands be *distended,* if they were in a sound state, and capable of absorbing, at the time when the effusion took place? The effusion of fluid in dropsy does not inflame those organs. Some cause must evidently exist,

* P. 59.

exist, on Mr. White's own supposition, to prevent absorption of the effused fluid from taking place; and that cause, upon my theory, must produce and support the effusion.

I combat this opinion more earnestly, because it tends to prevent the practitioner from employing the only remedy, which I have found to shorten the disease; that of topical bleeding: a remedy, trifling if Mr. White's theory were just, but indispensable if mine be well-founded.

I cannot avoid noticing, that the possibility of accounting for this disease, from inflammation of the absorbents, had occurred to Mr. White, and that he has rejected the supposition, upon grounds inconsistent with his own statement of the symptoms. In speaking of the remote cause of the disorder, he says, (p. 47) "It may be said to be owing to an inflammation brought on the trunk or trunks of the lymphatics, by the pressure

sure of the child's head on them during the process of labour, or on the glands through which these trunks must pass, and which lie on the edge of the pelvis. This may produce an adhesion of the cells of these glands, and make them impervious, and cause a stagnation of lymph in the extremity, and thereby produce the disease in question. The glands may perhaps in time recover themselves, or the absorbents below the glands may go round, and take a new road. The objection to this theory is, that the disorder most frequently does not appear till several weeks after delivery, whereas one would have expected it always to have appeared in a few days, which seldom happens."

But upon turning back to Mr. White's general history of the symptoms, (p. 57)* it will be found, that he fixes the time for the appearance of the disease, at *twelve or fifteen days* after delivery; a period which rather belongs to the denomination of a few days, than of several

* Inquiry, &c.

weeks. And upon referring to the cases themselves, it appears, that in the first patient, the symptoms came on upon the eight day; in the third case, on the tenth; in the fifth case on the ninth; in the seventh case, on the thirteenth; in the tenth case, on the fourteenth; in the eleventh case, on the sixteenth; in the twelfth case, on the twelfth day; in the thirteenth case, on the ninth; and in the fourteenth case, within twenty-four hours. So that in nine cases out of fourteen, which Mr. White has stated, the latest period of the accession of the disease was *sixteen days*. The result of his information from Mr. Smith (p. 34) is, that it "always began in about fourteen or fifteen days after delivery," and that from Mr. Pool (p. 35) is, that "four of these were attacked with it in a fortnight after delivery, one in three weeks, and another in forty-eight hours." The assertion at p. 47, therefore, does not appear conformable to the facts, from which it must be supposed to have been deduced. Indeed, if Mr. White's assertion

in

in that passage were true, namely, "that the disease does not appear till several weeks after delivery," it would be fatal to his own theory. For the rupture of a lymphatic, if it could produce the distension of the limb, as he supposes, must produce it almost immediately, at least in the neighbourhood of the supposed rupture.

On the other hand, there are cases, in which we have reason to believe, that the rupture of one or more lymphatic vessels actually happens, yet in which no swelling of this nature follows the accident. In dislocations of the humerus, for example, where the capsular ligament is torn, and the head of the bone is forced under the axilla, it is very probable that some of the lymphatics may give way. Yet we are not acquainted with any instance, in which the absorbent vessels, or conglobate glands have become enlarged and hardened, accompanied with this particular kind of effusion, though such dislocations have not been

been reduced for several months, and sometimes not at all. Rupture of the absorbents is certainly a much more probable occurrence, in such circumstances, than in the act of parturition.

The case to which I referred in p. 110, was accurately drawn up by Mr. Simmons, from his notes, at my request, and I insert it here in his own words, that the public may be in full possession of every thing yet known on this subject.

—— "aged 28, became a home-patient of the Infirmary, under my care, in the year 1791. The right ancle-joint was completely carious, from a scrophulous affection, and her general health much impaired. During the progress of the disease in the joint, she had proved with child, and was now in the sixth month of her pregnancy. Such generous diet as could be procured from the charitable contribution of her respectable neighbours, added to the pittance acquired

quired by her husband, was recommended, and she was supplied with medicines and applications from the Infirmary. At the proper time, she was delivered of a fine healthy looking child, after an easy and natural labour. About ten days from the time of her delivery, she complained of a swelling in the calf of her left leg, and of uneasiness in the inguinal glands on the same side, which, she informed me had subsisted for several days. The leg presented no discolouration, but was hard to the touch, of a shining appearance, and painful when pressed; the glands in the groin were enlarged, and painful on pressure. Her general health was, on the whole, amended since my first attendance, although the caries continued its ravages, unchecked by the particular circumstances of the case, or of the means used. As the affection was merely local, an anodyne fomentation was advised to be used twice a-day, and the saponaceous liniment with laudanum was applied after each fomentation. By these

these means, and these only, excepting the *electuarium laxans*, and opiate pills, which she had taken for several months, the disease subsided in less than a fortnight; the swelling never having extended beyond the calf of the leg.

"It will be impossible to explain this instance of disease, on the supposition of a ruptured lymphatic; and there was no evidence of any injury being done to any of the absorbent glands during labour.

"The carious limb was removed, as soon as she was fit to be admitted into the hospital, and the stump healing by the first intention, her general health was soon restored, and has continued with only casual interruptions to the present period."

Little can be known respecting the remote causes of a disease, which has been correctly observed in so few instances. In my patient, it was apparently

ly produced by the action of cold and moisture, and it has probably been occasioned by similar causes, in those cases where it appeared several weeks after delivery. But there are circumstances preceding delivery, which may operate as remote causes, and from which the frequency of its occurrence, in the puerperal state, may perhaps be explained.

It is an acknowledged fact, that during the last months of gestation, a considerable interruption is given to the return of blood, by the veins of the lower extremities, in consequence of the pressure of the loaded uterus, on the contained parts of the pelvis. The existence of venous plethora, under such circumstances, is proved by the varicous state of the superficial veins, which repeated pregnancies so often occasion. By the laws of the constitution, which it is unnecessary for me to repeat to pathological readers, this state of plethora in the veins, must be followed by encreased effusion from the exhalent vessels,

sels, and the encrease of exhalation must produce encreased action in the absorbents. In habits pre-disposed to the disease, occasional causes may readily excite inflammation, in a class of vessels thus extraordinarily stimulated. To this consideration we must join another; that much irritability in the lower extremities is evident, in the last months of pregnancy, from the frequency of cramps in the legs, during that period. The objection to this opinion is obvious; that the disease occurs after delivery. But I have shewed that the disease may exist, independently of every circumstance regarding parturition, and I do not think it impossible, though at present I cannot prove, that it may take place before delivery. Future observations must decide this question. But the violent pressure on the internal iliacs, and the accompanying veins and nerves, which takes place during delivery, must undoubtedly be considered as a powerful occasional cause of lymphatic inflammation, sufficient to ac-

count for the phænomena, without the supposition of a rupture of vessels.

It must also be considered, that the constitution is much more irritable, more liable to febrile and inflammatory complaints, after, than before delivery. The balance of the circulating fluids is suddenly and violently changed; there are new determinations, new sympathies produced, in a state of great debility, agitation, and anxiety. It cannot surprise us, that in circumstances so peculiar, a set of vessels, commonly exempted from inflammatory affections, should take on an unusual disposition.

From these views of the disorder, the method of treatment is easily deduced. As no inflammatory affection of the arterial system exists, and as the inflammation of the lymphatics is a local disease, topical bleeding is evidently best adapted to remove the symptoms; it is a remedy which proved remarkably useful in the case which I have related, and I should

should expect great advantages from its repeated application, upon any similar occasion that may occur in future. A succession of blisters will be a valuable addition to this course, and it will be proper to exhibit internally, gentle cathartics; perhaps cream of tartar, which appears to operate so powerfully on the absorbent system, in cases of dropsy, may be better adapted to this purpose than most other remedies of this class. By this method, the disease will probably be removed in two or three weeks, instead of continuing several months, which is the duration generally assigned to it, by writers on midwifery.

There is, as Mr. White remarks (p. 55),* a chronic swelling of the extremities, which resembles the disorder I have been describing. It is also occasioned by irritation given to the extremities of the lymphatic vessels, and it is remarkable, that in the following case of an outpatient of the Infirmary, which I had an opportunity of seeing, by the kindness of

* Inquiry, &c.

of Mr. Simmons, the swelling began in the distant part of the extremity, though the irritation commenced at the opposite point.

G——— aged forty, had a cancerous complaint in the left breast; about six weeks before I saw her, she was seized with pains in the arm-pit, striking down the arm, and enlargement of the axillary glands, and soon after, with a swelling of the hand, attended with considerable pain. The swelling rose gradually as high as the elbow, but never went farther. When I examined her, the swelling of the fore-arm and wrist was full, uniform, and not painful. No enlargement of the lymphatic vessels could be ascertained by the touch; and the swelling did not pit on pressure. There had been no considerable change in the state of the limb, during several weeks.

In such cases, perhaps, we see the effect of a degree of disease, sufficient to impede

impede the office of the absorbents, though not arising to inflammation. It is evident, from the preceding remarks, that the lymphatics are liable to active inflammation, more tedious in its progress than a similar affection of the blood-vessels; and it is highly probable, that the absorbent vessels are also liable to the disorder which we denominate chronic, or passive inflammation, which must in them be proportionally more lingering and indolent, than in the sanguiferous system.

In this chronic swelling, external stimulants will probably afford most relief, and I should expect considerable advantages from using a solution of camphor in spirit of turpentine, which I have found remarkably useful in relieving rheumatic pains. A succession of blisters will probably be useful in cases of this nature; but where the complaint arises from a permanent cause, as it did in the instance I have just given, it can hardly be deemed necessary to attempt a cure,

a cure, till the action of the irritating cause be removed.

In the Transactions of the Gottingen Society,* a case of this disease is related by Zinn, which deserves to be noticed, because it had a fatal termination. I transcribe it from the first volume of the Medical Museum, p. 335.

"A woman, thirty years of age, after a difficult labour, having the lochia greatly disturbed by some careless conduct, became much afflicted. Her right leg was seized with an œdematous swelling which extended from the groin to the heel, and enlarged the right labium pudendi. At the same time she was also seized with loss of appetite. Every probable means afforded by the art of healing was tried to remove the swelling, and yet it continued encreasing. neither diaphoretics, purgatives, nor diuretics, gave any relief; and fomentations and frictions excited more violent

* Tom. ii.

lent pain. An incision was made through the skin of the thigh, that the water might be drained off by an issue, but only a few small drops were discharged by it. The serum received on a piece of linen, had the appearance of jelly, its more liquid parts being resorbed. In the space of two months the patient expired. On dissecting the body, we found some of the inguinal glands scirrhous, greatly enlarged, and surrounding the crural vein, by which its diameter became very much diminished."

Since the former part of this essay was prepared for the press, another instance of this disease has occurred to me, in which I have had the satisfaction of finding the mode of practice I have proposed, succeed completely. The following is an accurate report of the state of the symptoms, and progress of the disease, as I observed them myself.

Jane Waters, of Garden-street, Salford,

ford, aged twenty-five, was delivered by an accoucheur, of her second child, December 26th, 1797, after being four days in labour. During delivery, she lay on her left side. Next day, December 27th, she was affected with pain and swelling of the left knee, which descended to the leg and foot of the same side. On the 28th December, the swelling began to rise from the left knee and to affect the thigh; it extended up to the left groin, and labium pudendi. I saw her, for the first time, on the 3d of January, 1798. I found the swelling tense, uniform, not discoloured; that there was a great sensation of rigidity in the limb, and that it was extremely painful on being touched, or moved. She felt exquisite pain in the ham, where I could perceive the lymphatics a little enlarged. The glands in the groin were not affected. She had been costive for several days. I ordered eight leeches to be applied to the left knee and ham, and that she should take two drachms of Rochelle salt, in solution, every three hours,

hours, till the bowels should be properly opened.

Next day, January 4th, I found that the leeches had procured a plentiful evacuation. She had also had several stools. The swelling was evidently lessened, and she said that her pain was much relieved.

January 5th, the swelling was considerably abated in the leg and foot, but continued tense upon the thigh. The Rochelle salt was repeated.

January 8th, the swelling of the thigh continued stationary, and gave some pain. Six leeches were ordered to be applied to the thigh, and the cathartic was repeated.

January 9th, the pain and swelling of the thigh were much relieved, but she could not yet use the limb, and the left foot swelled towards evening. She was now very open in her bowels.

January

January 16th, she had walked about, and attempted to clean out her room imprudently, in consequence of which, the left knee swelled again, and became very painful. The thigh, leg, and foot were not at all affected. I directed a large blister, to be applied round the knee.

January 18, the pain and swelling of the knee were almost entirely removed; but she was weak, and little able to move.

January 21, the affection of the limb is completely removed. She has no complaint, excepting debility, and a cough, which she had contracted previously to her lying-in.

This case is the more satisfactory, because writers on midwifery acknowledge, that this disease generally continues for several months, under their mode of treatment.

OF THE CROUP.

OF THE CROUP.

It is of great importance, to form an accurate opinion respecting the treatment of this disease, which is very short in its duration, and attended with extreme danger. Some modern writers have endeavoured to introduce distinctions, which are not warranted by any cases that I have met with, and I apprehend, that practitioners have been often diverted, by the suggestions of those authors, from the only effectual method of cure. It has been my lot, not only to have met with several instances of this disease in practice, but to have undergone it repeatedly in my youth, and to have seen a great deal of it in my family. I shall, therefore, describe

scribe it from my own observation, and shall explain the practice which I have invariably found to succeed, when employed sufficiently early in the disorder.

Some days before the appearance of the croup, the child is fretful, inactive, and drowsy: the eyes are somewhat suffused and blood-shot, and the complexion is muddy, or rather livid. There is some degree of cough, which generally resembles that attending a common cold, but sometimes has the peculiar shrill sound, even from the first. This cough, in the course of two or three days, becomes violent and troublesome, and it is then necessary to watch the patient, with great attention. The dangerous attack is commonly made in the night, sometimes soon after the child is put to bed, but more frequently about midnight. The cough, on the approach of danger, has a shrill, barking sound, and returns in redoubled fits, the first of which, though very violent, is succeeded in a few minutes by a second, longer, and yet more

more violent. Every fit of coughing agitates the patient, to an extreme degree: the face is swelled and flushed; the eyes are protruded; a general tremor takes place, and there is a kind of convulsive struggle to renew respiration, at the close of each fit. There is no expectoration, at this period of the disease. As the complaint encreases, the coughing fits are sometimes more troublesome, sometimes they become less frequent; but an incessant difficulty of breathing comes on, accompanied by swelling of the throat, about the place of the larynx: the head is thrown back, in the agony of attempting to escape suffocation, and the whole extensors of the trunk, and of the legs, are sometimes thrown suddenly into action, to assist the effort, so that the whole body is bent backwards, as in tetanus; in this attitude, and in this effort, the patient expires. I once attended the inspection of a fine boy, who had died of the croup, and I observed, his struggles had been so violent,

violent, that the corpse rested, in a great measure, on the hind head and the heels.

There is not only an unusual sound produced by the cough, something between the yelping and barking of a dog, which it is impossible to describe, but respiration is performed with a hissing noise, as if the trachea were nearly closed up, by some light, spongy substance. The expression of the countenance is also appropriate, and will alone betray the disease, to an experienced observer. There is much distention, the bloom of the cheeks is greatly heightened, the eyes are swelled up, watery, and exhibit great signs of suffering. The trembling, hurry, and restlessness, though accompanied with heavy sleep, proceed to an excessive degree as the disease advances, and the heart and arteries are thrown into violent palpitations. Respiration becomes more stridulous, is repeated at longer efforts, and with greater exertion, till it ceases entirely. Spontaneous vomiting sometimes comes on

on, in the course of the disease, and a quantity of viscid mucus is discharged, but without much relief. Children who are subject to attacks of the croup, are sometimes seized with the deep, barking cough, which will encrease to such a degree as to create much alarm, about the usual time of the dangerous exacerbation, yet it will decrease again, and at length go entirely off, without any other remedies than common demulcents. Cases of this kind, I suspect, have been described as genuine paroxysms of croup; and very trifling methods of cure have been recommended, in consequence of their apparent efficacy in the spurious croup, which always cures itself. The diagnosis of this particular case, is to be drawn from the following circumstances.

1. In the spurious croup, the cough has not the shrill, whining sound, which marks it in genuine cases. It is hoarser, and the intervals are longer.

2. Respiration

2. Respiration is not so much affected in the spurious croup, even when the cough becomes alarmingly violent; and the obstruction does not produce the sibilation peculiar to croup, but resembles more a common dyspnœa.

3. The spurious croup is not attended with the restlessness, trembling, and palpitation of the arteries, which characterize the other.

I must observe, however, that these distinctions are only to be learned, from much attention to the different cases of the disease; for the sound of the cough is so similar in both, as to inspire even the most experienced with some degree of doubt. I have sat by the child's bed-side repeatedly, watching for the moment of danger, while the cough was encreasing in violence; and have been only undeceived, by finding that no tremor or palpitation came on towards midnight, that the restlessness abated, and that

that sleep seemed to become more composed.

I have seen children affected with this disease, almost at all ages, under nine. In large families, if one child is seized with croup, most of the others generally begin, about the same time, to have symptoms of the spurious croup. I have never found reason to believe it infectious, and it appears very doubtful whether the disposition to it be hereditary. I have known it appear in families, to whom the symptoms were totally new.

The course of the genuine croup is very short. If the alarming symptoms which I have described, are not mitigated during the first six hours, the disease will generally prove fatal. It has happened several times, that I have been called, early in the day, to patients who had become seriously ill, only on the preceding evening, and in such cases I have only succeeded once. The proper

per

per time for administering relief, is when the cough, dyspnœa, and palpitation encrease, towards ten or eleven o'clock in the evening.

There can be no doubt, that the genuine croup is a disease highly inflammatory. In two cases, where dissection was permitted, I found the internal surface of the trachea, near the larynx, affected with the most violent inflammation. The membrane, so much talked of by the first writers on this disease, appeared, in both of these dissections, to be nothing more than inflammatory exsudation; it was observable in its different stages, as the inflammation had run down the surface, from a consistent substance at the upper part, capable of being pulled and torn, to the form of a purulent fluid, recently effused. If any other proof of the nature of the disease were wanting, I have received it in another manner, by seeing croup supervene, as an accessory disease, in two cases of ulcerated sore-throat. There had

had been little general fever, and there was no scarlet eruption, in either case. Though there were large ulcerations in the tonsils, there was, at the same time, vivid inflammation of the fauces. There was nothing uncommon in the symptoms, till the inflammation extended to the trachea, when faint, shrill coughing, hissing respiration, and restlessness came on, which were soon followed by death.

In a singular instance, I have seen pneumonic inflammation converted into croup. The inflammation had subsisted during ten days, in a boy about seven years of age; the acute pain in the side was relieved, but the pulse continued very rapid, though not quick, there was a considerable degree of dyspnœa, and the cough was frequent, with a pretty copious expectoration. On the morning of the tenth day he complained of pain in his throat, and in the afternoon, the cough began to assume the crouping sound. Leeches were applied to

to the throat, which produced a free discharge of blood, with an evident mitigation of the cough and dyspnœa. An attempt was then made to excite vomiting, by emetic tartar, but, though given in large doses, it run off by the bowels. Next morning, the cough was nearly gone, expectoration had entirely ceased, the respiration was hissing and difficult, and the pulse began to flag. Under these circumstances, it was thought necessary to stimulate the stomach in the most powerful manner. A grain of blue vitriol was given in solution, and as it produced no effect, seven grains more were successively exhibited, in the course of the day. No vomiting followed, and suffocation took place, in the general, fatal course of the disease.

In all the cases of croup which I have seen, I have found it necessary to bleed immediately, and when I have seen the patients sufficiently early, to entertain hopes of saving them, I have directed the evacuation to be continued, so as

nearly to produce fainting. This is the essential point of the cure, without which no relief can be effected. Even if the patient should not be seen, till the day succeeding the attack, it is proper to bleed *ad deliquium*, if the subject be plethoric, and the difficulty of breathing and restlessness be great.

A large bleeding generally produces an instantaneous abatement of the symptoms; but this is not sufficient for the safety of the patient. A blister must, at the same time, be applied to the breast, or between the shoulders, and ought to be made larger than usual. In the case of very young children, we must almost despair, for it is extremely difficult to procure any blood from them by the lancet, and leeches afford a very inadequate mode of depletion. Children above two years of age, may have blood drawn from the hands or feet, in tolerable quantity. The operator must not be nice, respecting the ap-

pearance

pearance of mangling, in circumstances so dreadful.

When the debilitating effects of the bleeding are over, the blister being applied, it is next necessary to exhibit a vomit. I generally use tartar emetic, in the usual doses, till full vomiting takes place. Considerable quantities of ropy mucus are thus brought off. I have never seen the inflammatory exsudation vomited up, in the form of a membrane. Yet in the event of a decrease of inflammation, in the lower part of the tube, I cannot conceive, that there should be any difficulty in its being voided, either by vomiting or expectoration, excepting in some few cases, where the inflammatory exsudation acquires the consistence of a membrane, even in the branches of the bronchiæ. On the second day of the disease, from the approach of insensibility, it is sometimes very difficult to promote vomiting. I remember, in one case, to have given, after large doses of ipecacuanha and emetic tartar, three

grains

grains of blue vitriol, before vomiting could be excited. The case was nearly desperate, for every effort to inspire, threatened suffocation. The irritability of the stomach was at length roused; much viscid mucus was discharged, and the child recovered.

If the first bleeding and emetic do not effectually relieve the cough, and difficulty of breathing, it becomes necessary to repeat the bleeding; and the evacuation in this case must again be carried as far as the patient's strength will permit. A repetition of the emetic, after the second bleeding, often puts an end to the disease; but if this should fail, we have nothing to hope from medicine.

The use of the warm bath may be very properly interposed, between these processes, and demulcents may be thrown in, to relieve the patient's sufferings, but I am convinced, that no other method, than the vigorous one which I have

have described, is capable of curing a genuine case of Croup.

I have endeavoured to place this matter in a stronger point of view, because many lives have been sacrificed to the imaginary powers of asafœtida, or small, repeated doses of antimonials, from unfounded theories, of spasmodic constriction attending the disease. On the contrary, I conceive the Croup to be as truly inflammatory, as pleurisy or peripneumony, and not to be more remarkably accompanied with spasm, than those affections.

The operation of bronchotomy has been proposed, as a last resource, in the advanced state of Croup, but I believe, from what I have seen in dissections, it would be completely useless. The upper part of the hardened membranous substance might be extracted, with the forceps, but the fluid portion, which fills the lower part of the trachea, and the bronchiæ, and which could not be removed

moved, would still occasion a powerful obstacle to respiration, and the inflammation, still existing, would certainly not be diminished by the operation. In those cases where the membranous matter was discharged, (of which Dr. MONRO of Edinburgh has some very remarkable preparations) it seems probable that relief was found, because the inflammation of the trachea had terminated, with the first effusion. But in both the cases which I have seen inspected, it was evident that the inflammation was extending rapidly, though effusion had taken place long enough, to present the membranous appearance, in the upper part of the tube.

In the unfortunate circumstance, of the Croup's supervening to the ulcerated sore-throat, from the extension of inflammation to the trachea, it is extremely difficult to direct our practice, and if the symptoms of Croup run high, it becomes scarcely possible to save the patient. To discontinue the bark, while the

the ulcerations are gaining ground, would be to devote the patient to certain death; and general bleeding is expressly prohibited by the same circumstance. Large blisters to the throat, leeches, and repeated emetics, are the only means of relief reserved to us; and I must own, that I have found them ineffectual, in this perplexing coincidence.

OF THE

HOOPING-COUGH.

OF THE HOOPING-COUGH.

This is a disease, which has been too little studied. Authors afford nothing satisfactory, respecting its duration or its cure. It has been too much trusted to the management of nurses, and has been empirically treated, even by those physicians, who have applied themselves to the particular consideration of the complaint.

We labour, indeed, under great disadvantages in this investigation: a contagion which escapes our senses; which produces but temporary convulsions, by its proper action; and that exhibits to the dissector, nothing but marks of the violent commotions which it occasions;

casions; a disease varying in its symptoms, with age, with temperament, and by its combination with other disorders, present uncommon difficulties. I do not pretend to give a complete view of the subject, but I shall mention some circumstances, which I have found particularly necessary to be observed, in my own practice.

The hooping.cough appears at first, under a variety of forms; sometimes as a common catarrh, sometimes as a general fever, accompanied with a cough, and sometimes, though rarely, it assumes the form of pneumonic inflammation. It appears to combine with other diseases, more readily than any other complaint produced by specific contagion, and in the following remarkable case, I found it, after being nearly lost in combination with one of the most powerful exanthemata, recruit its forces, and extinguish the supervening disease.

Miss ———, aged one year and a half, had

had the hooping-cough, in a slight degree, for some weeks. When it seemed to be leaving her, she was seized with the measles, and there was an appearance of a very large crop of the eruption. Her cough was not very troublesome, and no longer resembled the hooping-cough. On the third day, she was seized with an extreme degree of dyspnœa, and a short, harrasing cough, and the eruption almost entirely disappeared. The pulse became innumerable. Leeches were applied to the extremities, blisters were applied to different parts of the body, and every method was used to renew the eruption, but without success. The cough encreased, but the dyspnœa began to relax, and at length, to my great satisfaction, the type of the hooping-cough was renewed, and my patient recovered, by time, and change of air. Not one spot of the eruption of measles ran its usual course.

The cough generally continues, without much encrease, for some time, even after

ter it assumes its proper type; and it seldom reaches the greatest degree of violence, till the second or third week. The length of this period depends on the age, and strength of the child; the younger, and more robust, suffer more early, and more severely, than others. A thick expectoration, of a purulent appearance, comes on, when the fits of coughing become frequent: it varies in quantity, in different cases, and is rather vomited, than coughed up, at the close of the fit. I have known the fits return every ten minutes, during the night. In this state, the patient crows, in making a short inspiration, while the cough is suspended for a moment, and the extreme agitation of the lungs, and of the alimentary canal, sometimes produces a discharge of blood, both upwards and downwards. A great degree of flatulence prevails in the stomach and bowels, during this stage, and the paroxysms of coughing are accompanied with loud croaking in them. Thus the disease proceeds, till the patient's strength is re-

duced

duced to the lowest degree, consistent with life. Recovery takes place very slowly, by a gradual abatement of the symptoms, and a tardy return of strength. A very frequent pulse, quick at the beginning, but towards the height of the disease, small and thready, attends the complaint in its whole course. This constant degree of fever sometimes destroys the patient, by its continuance; sometimes, death seems to be occasioned by effusions of blood, into the head, or lungs. Nothing can be more uncertain, than the duration of this disease. Even after it appears to have entirely ceased, a slight exposure to cold will renew it with considerable violence; and accidental coughs, for some time after its disappearance, partake of the sound of the hooping-cough.

This disease is said to have been cured, by almost as great a variety of remedies, as intermittent fever. Bark, cicuta, tincture of cantharides, are all recommended by the experience of some prac-

titioner.

titioner. I believe that they may all have succeeded equally, for they have generally been tried about the height, or in the decline of a disease, which in most cases will cure itself. The only question is, whether it be possible to cut short the progress of Hooping-cough, or whether it must be left to run its course.

In the beginning of the disease, when it is accompanied by symptoms of fever and inflammation, bleeding is sometimes necessary. Blisters are more frequently necessary, and Dr. Armstrong's plan of exhibiting tartarized antimony, in doses which prove gently emetic, is undoubtedly very useful; chiefly, perhaps, by supplying the means of expectoration, to very young children. But after these preliminary steps are taken, I believe that the only remedy, which promises to shorten the disorder effectually, is the solution of white arsenic. I have employed this medicine, in several cases of Infirmary-patients, with tolerable success; and I have occasionally given it in private

vate practice, with so much advantage, that I think it deserving of farther trials. The dose with which I generally begin, is one drop daily, for an infant; and for children under seven, two drops, repeated according to the state of the symptoms. It requires some caution, to avoid the accumulated action of this medicine. The exhibition of the solution should be suspended occasionally, for a day or more, and the bowels should be gently opened, by means of a little calomel.

The state of the bowels should be carefully attended to: for, in some instances, astonishing accumulations take place, in very young children, and become sources of fever, independent of the original disease.

OF THE USE OF THE

NITRIC ACID, IN SIPHYLIS,

and some other Diseases.

OF THE USE OF THE NITRIC ACID, IN SIPHYLIS, AND SOME OTHER DISEASES.

Every practitioner who has had much experience in siphylitic complaints, must have found reason to regret, that in certain stages of those disorders, mercury ceases to produce any salutary effects, and that it even aggravates the patient's sufferings, by the peculiar symptoms which it occasions. Cases of this nature have been more frequent, since a practice was introduced of patching up siphylitic disorders, by slight courses of mercury, just sufficient to subdue the first symptoms, but unequal to the eradication of the taint. The advocates for mitigating the old method of salivation, carried their opposition to excess,

excess, as it generally happens in matters of controversy, and having begun by shewing, that their adversaries had administered too much mercury, they finished by advising an exhibition, which experience has shewn to be too small. I have met with several cases, in which the bones have been attacked, some years after the patients had been declared to be sound, by practitioners of reputation; and having felt the irksomeness of a conjuncture, in which I could neither relieve my patients, nor satisfy myself, it gave me great pleasure when the nitric acid was announced, as a remedy adapted to such disastrous situations.

Since Mr. Scott's account of its application with this view, was published, I have employed it in a variety of cases, both in private, and hospital-practice, and I shall now offer to the public the result of those cases, which appear to me conclusive.

1. *Eliz.*

1. *Eliz. Johnson*, a middle-aged, married woman, had been infected by her husband, nearly three years before she came under my care. As she did not for a long time suspect the nature of the complaint, mercury had not been fully employed, till within a short period previous to her admission into the hospital. She had constant pains in the head and limbs, when I saw her; nodes on the shin-bones; a large ulcer on the crown of the head, and some smaller ulcers on the thighs; she was weak, much emaciated, and had a considerable degree of hectic fever.

She informed me, that she had undergone a complete mercurial course, a few months before she came into the hospital; however, that I might ascertain, beyond all doubt, whether the disorder was still within the reach of mercury, it was thrown in, under my own inspection, and opiates were administered at the same time, in sufficient quantities to prevent it from running off by the bowels,

bowels, till her mouth became very sore. Though she was in no respect relieved by this process, I thought it right to support the soreness of the mouth for some little time, till it was apparent, that nothing was to be expected from its continuance. The mercury was then omitted, the patient was put on a course of bark and opium, and when the mercurial symptoms disappeared, I sent her to her home, which is in an airy situation, within a few miles of Manchester, and, as a last effort, directed forty drops of the diluted nitrous acid to be taken in water, four times a-day. She was now confined constantly to bed, and I expected a fatal termination of the disease. The ulcerations had never been affected, in the slightest degree, by the mercurial course. During several weeks, no change took place: the dose of the medicines was in the mean time gradually encreased, till she came to take a drachm of the diluted acid four times a-day. I was then informed, that the ulcer on the crown

crown of the head was healing, and that she was recovering strength.

I received no distinct account of her, till near four months afterwards, when she was able to walk to the Infirmary. The ulcer on the head was then completely healed, and her pains had left her almost entirely. She had not, by her own confession, been very diligent in using the acid; she said, that she thought it disagreed with her bowels, and that she had discontinued it three months; that she had afterwards taken sarsaparilla; and that there was no alteration, either in her pains, her weakness, or in the size of the ulcers, before she gave up the use of the acid.

2. *A. B.* a person between thirty and forty years of age, irregular in his manner of living, applied to me, on account of an ulcer on the under side of the penis, which I considered as a chancre, but which he would not believe to be venereal

venereal. On examination, I found that he had slight ulcerations in the tonsils, copper-coloured eruptions, and nocturnal pains. He had observed the ulcer, for more than two months. I put him on a mercurial course, and when his mouth became pretty sore, the symptoms gave way, and the chancre was healed. I urged the necessity of continuing the course for some time longer, but he was disgusted with his medicines, and discontinued them. I heard nothing of him for four or five months, when he returned to me, with his face and head overspread by venereal eruptions, and complaining of great heat in the nose, and pains over the orbits. I found, on examination, the membrane lining the nostrils deeply inflamed, and small ulcerations formed on the lower part of the septum narium, on each side. I thought it necessary, from these appearances, to intimate the possibility of his losing a part of the nose, especially if I might depend on his solemn assertion, that he had not been

exposed

exposed to fresh infection. Mr. Scott's account of the nitric acid had not then appeared, and I had no choice respecting the remedy. Mercury was again administered, and it again removed the symptoms, after a considerable degree of soreness had been kept up in the mouth, during nearly three months. When relief from his sufferings was thus obtained, he became once more unmanageable; complained of the constant inconvenience, resulting from the affection of his mouth; feared that the mercury would *get into his bones*, according to the vulgar opinion; and at last withdrew himself entirely.

At the expiration of a year and a half, he applied to me again, much altered in his appearance, and convinced, too late, as I feared, of his error in relinquishing his medicines prematurely. He had now incessant, racking pains in his head and limbs; a node was formed on the left tibia; and he had a frequent, thin discharge from the left nostril, attended

tended by pain, about the situation of the ethmoid bone, in the left orbit. On blowing his nose, he sometimes discharged portions of a fleshy appearance, from that side, and every discharge of this nature was succeeded by a painful sense of rawness, extending up to the orbit, and an extreme sensibility on the admission of air in inspiration. He expressed the strongest desire of relief, but begged, that if it were possible to remove the disease otherwise, he might take no more mercury. He was much emaciated by pain, total loss of sleep, and anxiety of mind. His appetite was almost entirely gone. After representing to him the small chance of a cure which he had left himself, and the necessity of steadily observing the plan which I should lay down, I directed him to take the diluted nitrous acid, beginning with thirty drops, four times a-day, and taking half a grain of opium, every night, or occasionally in the day, according to the state of his bowels. A blister was applied immediately, to the

node

node on the left leg. Under this treatment, the pains in the head and legs abated, so as to restore the patient to tolerable ease, in the course of three weeks; and the node disappeared; but the pain in the orbit, and fleshy discharge from the nostril seemed rather to augment. There was no soreness of the mouth. He now felt great weakness in both thighs, which were considerably shrunk, and was much troubled with a dull aching in them, which he had not perceived, till the acute pains in the legs left him. By this time, he had encreased the dose of the acid to fifty drops, four times a-day, and it began to affect his bowels, though it was joined with considerable doses of opium. I therefore proposed to him to resume the use of mercury, which had always produced the happiest effects on his constitution. The mercurial course was then entered upon, by giving five grains of the mercurial pill, night and morning, and in a few days after, he discontinued the use of the acid. All his symptoms

symptoms were removed, soon after the mercury affected his mouth.

3. *David Jones*, was admitted an in-patient, June 27, 1796, for a rheumatic complaint, which had entirely deprived him of the use of the lower extremities. There was some appearance of distortion in the spine. He took diaphoretic medicines, and opiates, and had caustics applied to that part of the spine, which seemed to be incurvated. A few days after his admission, on his informing me that he had had a venereal complaint, which he thought had never been completely cured, I ordered him a few grains of calomel, every night, at bed-time; but as no relief was obtained by this, or the other remedies, and as the disease assumed more of a paralytic form, they were discontinued, and he was ordered to take our *infusum stimulans*, an infusion of horse-radish and mustard-seed. He continued to be confined to bed, without motion in the lower extremities, having blisters occasionally applied, till

till January 24, 1797; the issues having been permitted to heal up. I then ordered him forty drops of the diluted nitrous acid, four times a-day, which, on the 13th February, were encreased to a drachm, four times a-day. Under this course he began gradually to recover; he was enabled to walk about with little difficulty, and on the 27th February, he was well enough to be made an out-patient. He has since, completely regained the use of his limbs.

4. *William Brown*, was admitted an in-patient, January 23d, 1797, with a sciatic pain in one thigh, which obliged him to walk upon crutches, and sometimes disabled him from moving at all. The part affected, was blistered repeatedly, and he took the tincture of guaiacum daily, with occasional doses of Dover's powder. This plan was continued till the beginning of March, with little or no benefit. I then determined to try the power of the nitric acid, induced

duced by its effects upon Jones, and by the analogy which Mr. Scott had pointed out, between the action of this medicine and the supposed operation of mercury, which has proved so valuable a remedy in cases of chronic rheumatism. This man began to take the acid, in the same manner with the preceding patients, and I pushed the dose to a drachm four times a-day, as soon as he could be brought to take the necessary quantity of liquid. I had the satisfaction, in this case also, of obtaining a complete cure. The patient, when I saw him last, walked upright, without any assistance.

I did not perceive, in any of these cases, that the mouth was affected by the exhibition of the acid, in the manner described by Mr. Scott.

5. *Ann Major*, in consequence of a siphylitic affection, imperfectly cured, was liable to nocturnal pains and nodes, chiefly about the forehead. She had been

been ill upwards of five years, when I first saw her. Mercury, mezereon, sarsaparilla, and tincture of guaiacum were successively employed, with various success, till last summer, when I put her on a course of the nitric acid. In a few weeks, she felt more relief from this medicine, than from any other that had been employed. In August last, she was ordered to take five drops of muriatic acid, four times a-day, in water. Under this course, she has had no return of pain, but thinks her appetite and strength improved.

6. *Samuel Lloyd* was admitted an in-patient, August 21, 1797, complaining of constant pain in his head, which was so severe as to deprive him of rest, and render him incapable of any occupation. He had been ill for several months. I directed eight ounces of blood to be taken from the jugular vein; a blister to be applied to the crown of the head, and three grains of calomel to be given every night, at bed-time. On the 26th, finding

finding that he was not relieved, I directed blisters to be applied behind the ears. On the 28th, he shewed me a considerable portion of bone, which he had just discharged from one nostril. Upon a strict enquiry, he informed me, that he had had a gonorrhœa, accompanied with a chancre, about seven years before; that he had taken mercury, under the direction of a medical practitioner, and had been declared cured. I ordered the calomel to be omitted, and directed him to take five drops of muriatic acid, four times a-day.

The small quantity of calomel which he had taken, affected his mouth so much, as to produce a smart spitting: by this extreme susceptibility of the system, perhaps, the practitioner, who had put him under a former mercurial course, might have been deceived, respecting the quantity necessary to be exhibited. His pains were relieved, while the spitting continued; I persisted in the use of the acid, and on the 14th of

of September, his pains were entirely removed; he had discharged no more bones from the nostril, and he only complained of an internal noise in his head. His mouth had been perfectly well upwards of a fortnight.

September 29th, the pain returned with great severity. The muriatic acid was then omitted, and the nitric substituted in its place.

October 7th, his pains were lessened, and his mouth had become extremely sore, by taking forty drops of the diluted nitric acid, four times a-day.

October 16th, his head continues easy, but he complains of pain in his limbs.

November 5th, his mouth was again sore, and there was a pretty copious discharge of saliva; the pain in his head had been returning for some time: it was now violent, particularly in the forehead.

forehead. A blister was applied, but produced little relief.

November 16th, the pain in the head had become excruciating: there was still considerable soreness of the mouth. I now ordered the acid to be discontinued, and directed him to take ten grains of the oxygenated muriate of pot-ash, thrice a-day.

November 20th, a large node appeared on the left temple; he thought his pain diminished, after the first dose of the medicine. It was encreased to fifteen grains, four times a-day.

November 28th, his forehead and face were extremely painful. The node was encreasing. His mouth was very sore, but there was no encreased discharge of saliva.

December 7th, the head and face continued very painful. There was a general enlargement of the *os frontis*. The pain

pain of which he complained in his mouth, seemed to be an affection of the bony parts. There was no soreness of the gums, or ptyalism. I now discontinued the oxygenated muriate, and put him on a course of calomel.

December 21st, his head was much easier, though his mouth had not yet become sore.

February 8th, his head is completely relieved: his mouth is sore. He has been very open in his bowels, during the last eight days.

March 1st, his head continues easy, but he complains of pain at the angles of the jaws, in consequence of the mercurial action.

7. *Mary Keene*, had been a patient of the Infirmary, at different periods, during the course of five years, for siphylitic complaints, which were often suspended, but never entirely removed, by

 the

the use of mercury, guaiacum, mezereon, and sarsaparilla. She applied to me once more, as an out-patient, in summer, 1797. She then complained of pains in the bones, and the occasional appearance of nodes, chiefly on the forehead. I ordered her to take five drops of muriatic acid, four times a-day.

When I last saw her, she had continued this medicine upwards of a month, and thought her pains greatly relieved by it. No nodes had appeared.

She used no other medicine at the same time, and she had employed no mercury for a very considerable time previous to her taking this acid.

8. *John Lees*, had the venereal disease upwards of four months. He had chancres originally, which were healed, when I first saw him, and he now complained of pains in the bones, sore throat, a large, nauseous discharge from the nose, and some external ulcers. He had taken

taken mercury, but not for some time before I saw him. I ordered him half a drachm of diluted nitrous acid, four times a-day. He continued this course for three weeks, without the smallest advantage; I then threw in mercury, still administering the acid, and his symptoms are yielding, more quickly than I could have expected.

In the course of two months, after this report, he was able to attend as an out-patient, at the Infirmary.

Besides the cases which I have thus mentioned at length, I have used the nitric acid in a variety of venereal complaints, in conjunction with mercury. I have not perceived, that by this combination, a smaller quantity of mercury was sufficient to eradicate the disease, nor have I found that the sensible action of mercury on the salivary glands, was at all promoted, by the use of the acid.

My observations would rather lead me

me to suppose, that the acid lessens the irritability of the system, and prevents the extent, to which the mercurial disease usually proceeds. In speaking of immediate deductions from facts, I set the chemical pathology aside.

It appears from the facts I have mentioned, that the specific power of the nitric acid, in venereal complaints, is limited, to certain symptoms, in the advanced stages. It seems to remove the pains of the long bones, and to act on the superficial ulcers of the third stage, but I should hardly be inclined to trust the cure of any well-ascertained venereal affection, to the acid alone. Mr. Simmons's trials of this remedy, which will be found in the Appendix, shew that the acid is capable of extinguishing the symptoms, in a recent case.

I have never been able to ascertain clearly, that the soreness of the gums, and slight salivation, of which patients certainly complain sometimes, while they

they are using the acid, depend on a general action on the salivary glands. When the acid mixture is not sucked through a quill, or a glass tube, the gums are affected by the direct application of the acid; and patients have observed to me, that even with the precaution of using glass tubes, they still felt, that every dose of the acid affected the teeth and gums. I can positively assert, that I have known the acid taken in large quantities, for a considerable length of time, in conjunction with the free use of mercury, without producing any ulceration of the gums, or encrease of saliva; yet with the effect of destroying every venereal appearance, in well-marked cases.

I do not undertake to explain these contradictions to the principles, on which the use of the nitric acid has been introduced, in this disorder. Of the facts related by Mr. Scott, whom I feel a pride in mentioning, as one of my earliest, and most valued friends, I can-
not

not entertain a doubt. And if my experience differs, in any respect, from his, I hope the variation may be more owing, to the great difference between the climates, in which we have respectively used the medicine, than to inaccuracy on my part.

Supposing the efficacy of the nitric acid, in this disease, to be ascertained, an important question will remain to be decided: how far the sulphuric, and muriatic acids are capable of acting in a similar manner. The operation of these three acids has, hitherto, been considered as nearly identical. We have used them indiscriminately, as tonics, and they have all produced those effects on the system, which the chemical physicians ascribe, at present, to the action of oxygen. The muriatic acid, in particular, has been much employed by me, both in private and hospital practice, for restoring the strength of the moving fibre, in cases of scrophula, of phthisis, of dyspepsia, or of general debility; and I have

I have always found its effects to be, an acceleration of the pulse, an agreeable, glowing sensation in the stomach, a feeling of encreased vigour and alacrity, and a heightening of the complexion. It has proved, in many instances, an useful substitute for bark, steel, and bitters, by the smallness of its dose, and by its freedom from the disagreeable taste of some of those remedies.

The reader must have perceived, that in one or two of the preceding cases, the effect of the muriatic acid was slightly tried. Perhaps, in the progress of this enquiry, more accurate distinctions may be established, respecting the relative powers of these different acids. At present, the nitric appears to be the more valuable.

After my success with the nitric acid, in chronic rheumatism, I was induced to employ it in some cases of general debility, and great irritation of the nervous system, and I have derived as much ad-

vantage

vantage from it, as could have attended the use of the most powerful tonics. I am persuaded, that in many irritable, bilious habits, it may be used with great benefit, in place of bark, and the other usual remedies. In typhus, it will probably be found an excellent tonic, instead of bark, especially when the bowels are irritable, and when the muriatic acid would be apt to produce, or encourage diarrhœa. From the great encrease in the dose, upon which we now venture, we may expect an action, nearly adequate to all the purposes of tonics, in fever, with the advantage of a remedy less offensive to the palate, and more effectual in relieving thirst. The only case of typhus, in which this medicine can be contra-indicated, is, when there is much diarrhœa, or tendency to active inflammation, or to hæmorrhage. Yet even under these circumstances, I conceive that the full dose only is prohibited; in conjunction with opiates, it may be moderately used, with advantage.

In giving the diluted acid, with opium, it may be proper to observe, that the opium should be added to it in substance. The addition of a drachm of laudanum, to an ounce or two of the diluted acid, will sometimes produce an explosion, especially if the phial be agitated.

Upon the whole, I think we may conclude, that the nitric acid has a powerful effect in certain stages of the venereal disease, but that neither the extent, nor the permanency of this effect is yet ascertained. That we have acquired, at least, a valuable auxiliary to mercury, an useful remedy against chronic rheumatism, and, what was much wanted, a palatable tonic.

I have been induced to try the oxygenated muriate of potash, a remedy which we owe to the chemical pathology, by the favourable accounts I had heard of its action, from some of my medical friends. I have found it efficacious in the true scurvy

scurvy, cases of which occur sometimes among the poor, in consequence of improper diet; I have even thought, that the soreness of the gums was sooner healed by this, than it is usually by ordinary remedies. In siphylitic complaints, I have seldom employed it, and in them, I have seen no remarkable advantage derived from it. I have tried it with some degree of perseverance, in cases of general debility, but it has always disappointed me, and the patients have afterwards been relieved by the bark, and other tonics. In one slight case of dropsy, it operated as a diuretic, and the disease was cured. But in several other dropsical patients, who took it from three weeks to a month, no encrease of urine was produced. I have generally given it in the dose of fifteen grains, every four hours.

I have been informed, that this medicine has been found to diminish the pains of the shin-bones, in lues, in a remarkable degree. In the case of Lloyd, which I have

have given, it had no influence on the nocturnal pains of the head. It appears to be perfectly safe in its application, for, though it has often disappointed my hopes of its action, I never found it productive of any inconvenience to the patient.

OF THE TREATMENT
of the
DYING.

Disturb him not—let him pass peaceably.

OF THE TREATMENT OF THE DYING.

There is hardly any subject, on which books afford us more impressive topics, than the consideration of death; and perhaps there is none less studied in its minute details. The wise look beyond it, and the inconsiderate escape from their reflections, when they would draw them towards the terrible object. It might be expected, that a scene through which we must all pass, should excite a closer attention; especially as the physical process of death loses much of its horror, on a near view. But there is yet a more powerful motive, for lifting part of the veil; the sufferings of persons in the last stage of death, are often aggravated,

vated, by the prejudices and indiscretion of their attendants. When all hopes of revival are lost, it is still the duty of the physician to sooth the last moments of existence; and it belongs to his province, to determine when officiousness becomes torture.

It is scarcely necessary to premise, that the following observations can only be applied to foreseen, or as we term it, natural death. Philosophically speaking, indeed, all death is sudden: the ultimate period of circulation and respiration, is a total and instantaneous change from the lowest degree of life. We may adopt, on this subject, a thought, which a certain writer, more noted for his wit than his morality, has introduced over the body of a ship-wrecked sailor: *si bene calculum ponas, ubicunque naufragium est.* But when death is occasioned by unexpected circumstances, it is certainly proper to employ the means of recovery, which have been so often impressed on the view of the public, though

though perhaps the efficacy of those means has been over-rated. The sensibility of the patient is probably so quickly destroyed, by some accidents, particularly by drowning or suspension, that ineffectual attempts can do no other harm than to fatigue the attendants.

When the approach of death is ascertained, either from the symptoms of the disease, or by the patient's own feelings, the friendly offices of the physician are not less grateful to the sick, than satisfactory to the surrounding relations. He will not, like ignorant practitioners, torment his patient, with unavailing attempts to stimulate the dissolving system, from the idle vanity of prolonging the flutter of the pulse for a few more vibrations: if he cannot alleviate his situation, he will protect him against every suffering, which has not been attached to it by nature.

While the senses remain perfect, the patient ought to direct his own conduct, both

both in his devotional exercises, and in the last interchange of affection with his friends. The powers of the mind, after being forcibly exerted on those objects, commonly sink into complete debility, and respiration becoming weaker every moment, the patient is rendered apparently insensible to every thing around him. But the circumstances of the disease occasion much variety in this progress. In fevers, when the brain suffers by suppuration, the interval between oppression and death is hardly discernible. In peripneumony, with all the determination to the head, which is necessarily caused by the state of the lungs, the patient is generally collected previous to death. Indeed, in most cases, in which the patient is destroyed by the rapidity of circulation, there is a sort of lucid interval, immediately before dissolution, because the action of the vessels is at length retarded, by the debility of the dying state. This may be perceived, by the looks and gestures, even when

when the patient is incapable of speaking.

In those who die of chronic diseases, the gradation is more slow, and distinct. Consumptive patients are sometimes in a dying state, during several days: they appear, at such times, to suffer little, but to languish for complete dissolution; and I have known them express great uneasiness, when they have been recalled from the commencement of insensibility, by the cries of their friends, or the efforts of the attendants to produce pain.

In observing persons in this situation, I have always been impressed with an idea, that the approach of actual death, produces a sensation similar to that of falling asleep. The disturbance of respiration is the only apparent source of uneasiness to the dying, and sensibility seems to be impaired, in exact proportion to the decrease of that function. Besides, both the impressions of present

sent objects, and those recalled by memory, are influenced by the extreme debility of the patient, whose wish is for absolute rest.* I could never see the close of life, under these circumstances, without recollecting those beautiful lines of Spenser:

> Sleep after toil, port after stormy seas,
> Ease after war, death after life doth greatly please.

In some delicate and irritable persons, a kind of struggle is sometimss excited, when respiration becomes very difficult: I have known this effort proceed so far, that

* I should not have presumed to speak so positively of these sensations, if I had not once experienced them in some degree, at the close of a delirium, of three weeks continuance, in a very dangerous typhus. An anecdote has been published, of a late eminent anatomist, which, I hope, is well-founded. A few minutes before his death, he said to those around him, "If I had a pen in my hand now, and were able to write, I could tell how easy and pleasant a thing it is to die."

Montaigne was among the first modern writers, who had the resolution to contradict the general opinion of the painfulness of death, and he has nearly exhausted the subject.—Buffon followed him, with more eloquence, but less argument.

that the patient, a very few minutes before death, has started out of bed, and stood erect for a moment; but this appeared to be the effect of apprehension. Those who resign themselves quietly to their feelings, seem to fare best.

The action of the arterial system is gradually destroyed, and not always in the same direction. This difference depends on the nature of the destroying cause: when this is general debility, however produced, the pulse ceases first in the extremities, which become entirely cold, and the larger vessels die successively, till the action of the heart itself is extinguished. In the nurse's phrase, the patient *dies upward.* But when the cause of death is a more partial affection, in apoplexy, for example, the pulse continues in the wrists and feet, and those parts even feel to the hand uncommonly warm, just before death.

One of the surest indications of the nearness

nearness of death, is the alternate tossing of the arms, from the breast backwards. This, perhaps, is an effort to assist the muscles, which dilate the chest.

The length of the interval between insensibility, and the absolute cessation of existence, which occurs in so many cases, has given rise to a multitude of superstitious notions, and mischievous practices among the vulgar. Indeed, some of these notions are of considerable antiquity. Under the heathen mythology, it was believed that the struggles of death continued, till Proserpine had cropt the hair on the crown of the head, as victims were treated at the altar. Virgil has preserved this opinion, in the fourth book of the Eneid, where he offers so fine a picture of the dying agonies of Dido:

Tum Juno omnipotens, *longum miserata dolorem,*
Difficilesque obitus, Irim demisit Olympo,
Quæ luctantem animam, nexosque resolveret artus.
Nam, quia nec fato, merita nec morte peribat,
Sed misera ante diem, subitoque accensa furore,
Nondum illi flavum Proserpina vertice crinem
Abstulerat,

Abstulerat, Stygioque caput damnaverat Orco.
Ergo Iris croceis per cælum roscida pennis,
Mille trahens varios adverso Sole colores,
Devolat, et supra caput astitit: hunc ego Diti
Sacrum jussa fero, teque isto corpore solvo.
Sic ait, et dextrâ crinem secat: omnis et unà
Dilapsus calor, atque in ventos vita recessit.

It does not appear, that the attendants, in those ages, presumed to accelerate the death of the sufferer; but in the two last centuries, it was very common to strip the dying, to drag them out of bed, and place them on mattresses of straw or hair, in the middle of the room. Religious habits, ashes, and relics were then thrown upon them, for the consolation of those,

——— who to be sure of Paradise,
Dying put on the weeds of Dominic,
Or in Franciscan thought to pass disguised.

The Hindoo, perhaps, feels little inconvenience from being placed, in his last moments, by the waters of the Ganges, though extended on the soil; but in our winterly climates, such fatigue and exposure must have been a dreadful

dreadful aggravation of the horrors of a death-bed. Erasmus gives a masterly account of those extravagances of mistaken devotion, in his dialogue, entitled The Funeral.

The effects of these impressions still remain: it is a prevalent opinion among nurses and servants, that a patient, whose death is lingering, cannot quit life while he remains on a common bed, and that it is necessary to drag the bed away, and to place him on the mattress. This piece of cruelty is often practised, when the attendants are left to themselves. A still more hazardous practice has been very prevalent in France and Germany, and, I am afraid, is not unknown in this country. When the patient is supposed by the nurses to be nearly in a dying state, they withdraw the pillows and bolster from beneath his head; sometimes with such violence, as to throw the head back, and to add greatly to the difficulty of respiration. A full account of this inhuman custom, may

may be seen, in a tract preserved by VALENTINI,* drawn up by a German lawyer, in which he asserts, that patients have been repeatedly suffocated in this manner, when there was no reason to expect death from the symptoms of the disease. As the avowed motive for this barbarity, is a desire *to put the patient out of pain*, that is, to put him to death, it is incumbent on his friends to preserve him from the hands of those executioners.

Another improper practice, is the precipitation with which the attendants *lay out* the body, immediately after death appears to have taken place. I have known them strip the body, in very cold, stormy weather, wrap it in cold linen, throwing a single sheet over it, and opening the doors and windows of the apartment, in little more than half an hour, after a patient had died suddenly.

There

* Novellæ Medico-legales, p. 1200.

There is, indeed, a singular instance recorded by SYDENHAM, of the revival of a patient thus used, during the prevalence of the fiery treatment of small-pox. A young man, having gone to Bristol, was seized with the small-pox, and became delirious. During the absence of his nurse, the attendants supposed him to be dead, and on account of the heat of the season, and the patient's corpulency, took the body out of bed, and laid it naked on a table, merely throwing a sheet over it. The patient, thus cooled, began to revive. His nurse, on her return, perceived signs of life in him; he recovered, and, several years afterwards, told this story to Dr. Sydenham. But the rough treatment of the body, and the sudden alteration from the temperate warmth of the bed, to the rigorous cold of a winter's night, have, perhaps, in some cases, extinguished the feeble remains of life, which might have been cherished by more gentle methods.

It

It is too certain, that the helpless patient feels all these cruelties, after he has become unable to express his sensations distinctly. The testimony of persons, who have recovered from apparent death, leaves no doubt on this head. Perhaps a more deplorable condition can scarcely be conceived, than that of the expiring master of a family, transferred from the soothing care of his friends, to the officious folly, or rugged indifference of servants. This is a state of suffering to which we are all exposed, and if it were unavoidable, I should be far from desiring to unveil so afflicting a prospect. But the means of prevention are so easy, that I cannot forbear to solicit the public attention to them.

When the tossing of the arms, which I have described, the rattling noise in respiration, and difficulty of swallowing have come on, all unnecessary noise and bustle about the dying person should be prohibited. The bed-curtains should be drawn nearly close, and unless the patient

patient should place himself in a posture evidently uneasy, he should be left undisturbed. Exclamations of grief, and the crouding of the family round the bed, only serve to harrass him.

The common practice, of plying him with liquors of different kinds, and of forcing them into his mouth, when he cannot swallow, should be totally abstained from.

When he no longer breathes, one person only should remain in the room, who should take care that no alteration be made in the state of the bed. Every thing should be conducted, as if he were in a transitory sleep. If the weather be hot, the windows of the room may be opened, and the bed-curtains undrawn, in the course of two or three hours. In winter, it will be sufficient to withdraw the curtains within that time.

There can be no just reason for the haste, with which it is usual to lay out the

the body. Several hours may be very properly suffered to elapse, before this is done; for the joints do not commonly become rigid for a considerable time. At the end of that period, the body will be completely cold, and all remains of sensibility will have been extinguished.

It is far from my intention, to excite, by these remarks, apprehensions respecting premature interment, in those who may be led to peruse this paper, without much knowledge of medical subjects. The period to which I wish to direct attention, precedes the funeral by several days, according to the customs of this country; and it must require uncommon folly, to incur any hazard of such an event.

In France, there seems to have been a very blameable degree of haste, and there can be little doubt, from the facts mentioned by BRUHIER (even allowing something for exaggeration), that persons

sons have revived on the bier, and during the performance of the funeral-service, after having been rashly pronounced dead, by inattentive observers. When BRUHIER wrote, the danger of suppressing the faint signs of remaining life was encreased, by the horrible practice of stopping up the mouth, nostrils, ears, and other passages, immediately after the supposed decease of the patient.

If we can depend on the facts related by this author, of the interment of persons within twelve hours, after strong accessions of epilepsy or apoplexy, we may, indeed, admit the dreadful possibility, of their being buried in a state not destitute of consciousness, though deprived of all power of expressing it.

According to BRUHIER, the rituals which were most cautiously drawn up, only enjoined the delay of interment for twenty-four hours after death, but others directed it to be performed within half of that

that period. He mentions a shocking instance of the abuse of the power thus confided to individuals, which, I hope, could hardly be parallelled, under all the carelessness on the subject of interment, which seems to have existed at that time in France.

A provincial notary, who had a law-suit with his vicar, was seized with an epileptic fit, so severe, that the attendants thought him dead. The vicar took care to bury his antagonist, at the expiration of twelve hours. Next day, a person who had occasion to go into the church, heard a great noise, proceeding from the grave of this unfortunate man; he gave immediate notice of it to the clergyman, who desired him to say nothing about it. The family, however, were informed of this circumstance, and obtained permission to take up the body; it was found lifeless, but marks of struggling were perceived on the hands.*

Happily,

* De l'Incertitude des Signes de la Mort, tom. i. p. 168.

Happily, the usage of keeping the body unburied during several days, is so firmly established in this country, that it is unnecessary to speculate on the possibility of such abuses. The slightest appearance of beginning putrefaction, affords sufficient security against any revisitings of life, and marks of this nature are almost always visible, before the date of interment observed here.

APPENDIX.

In the paper subjoined, No. I, are contained some rules for the preservation of the poor from contagious fevers, which were originally drawn up, for the purpose of being distributed by the Board of Health. Circumstances, which it would be uninteresting to mention, prevented its publication through that channel, and I insert it in this place, because it contains observations, which may be found useful, in other manufacturing towns. I have accommodated the language, to the persons for whose benefit it was designed.

In No. II, are to be found some observations, with which Mr. Simmons *has favoured me, on subjects treated in the present volume.*

APPENDIX.

No. I.

ADVICE TO THE POOR.

You are requested to read the following paper with attention, by persons who are endeavouring to relieve you from the misery and fatality of fevers, and other infectious diseases. A great deal has been done by the establishment of the fever-wards, the good effects of which you daily experience; but much depends upon your own conduct, for preventing the first occasions of sickness. We can only stop the progress of diseases after they have once begun, but it is greatly in your power to prevent them from beginning at all, by attending

ing to the simple directions which follow.

Avoid living in damp cellars: they destroy your constitutions, and shorten your lives. No temptation of low rents can counterbalance their ill effects. You are apt to croud into the cellars of new buildings, supposing them to be clean. This is a fatal mistake. A new house is always damp for two years, and the cellars, which you inhabit under them, are generally as moist as the bottom of a well. In such places, you are liable to bad fevers, which often throw the patient into a decline, and you are apt to get rheumatic complaints, that continue for a long time, and disable you from working.

If you cannot help taking a cellar, be attentive to have all the windows put in good repair, before you venture into it, and, if possible, get it whitewashed. If you attempt to live in a cellar with broken

broken windows, colds and fevers will be the certain consequences.

In many parts of the town, you sleep in back-rooms, behind the front-cellar, which are dark, and have no proper circulation of air. It would be much more healthy to sleep to the front: at least, when you have large families, which is often the case, you ought to divide them, and not to croud the whole together in the back-cellar.

Keep your persons and houses as clean as your employments will permit, and do not regret the loss of an hour's wages, when your time is occupied in attending to cleanliness. It is better to give up a little time occasionally, to keep your houses neat, than to see your whole family lying sick, in consequence of working constantly, without cleaning. It would be of great service, if you could contrive to air your beds and bed-clothes out of doors, once or twice a-week.

Always wash your children from head to foot with cold water, before you send them to work in the morning. Take care to keep them dry in their feet, and never allow them to go to work without giving them their breakfast, though you should have nothing to offer them but a crust of bread, and a little water. Children who get wet feet, when they go out early fasting, seldom escape fevers, or severe colds.

If you know that any of your neighbours are in a starving condition, apply to some opulent persons in the neighbourhood; get them recommended to the overseer; or, if they are sick, to the Infirmary. Want of necessary food produces bad fevers; and many of you may suffer from neglecting poor, distressed persons, whom timely relief would have preserved from the disease.

When you know, or have reason to believe that any of your neighbours are afflicted with fevers, and that they have not

not taken care to procure the assistance afforded by the Infirmary, you ought, both from a regard to them and to yourselves, to give immediate information to the physicians, or some trustee of the Infirmary, or to Mr. Bellott, Secretary to the Board of Health. The Board allows the sum of two shillings, for every well-founded information of this kind.

You ought to be very cautious in purchasing old clothes, or second-hand furniture; as they may be brought from houses infected with fever, and you may introduce the infection with them, into your own dwellings. Every article of this kind ought to be stoved or ventilated, before it is admitted into your houses.

Your sick neighbours, when the fever gets into their houses, may often require assistance from you. It would be cruel to refuse them, yet it is hard that you should be obliged to expose your health

health, and that of your family. You ought never to visit them from idle curiosity. But when they require your help in making their beds, washing, or turning the sick, you may preserve yourselves from being infected, by tying a handkerchief across your face, just below the eyes, to prevent the exhalations from the bodies of the sick from entering your mouth and nostrils. As soon as you return to your own house, wash your hands and face in cold water, and avoid touching any of your family, for half, or three quarters of an hour.

Your health will always be materially injured by the following circumatances; living in small back buildings, adjoining to the open vaults of privies; living in cellars, where the streets are not properly soughed, or drained: living in narrow bye streets, where sheep are slaughtered, and where the blood and garbage are allowed to stagnate and corrupt; and, perhaps, more than all, by

by living crouded together, in dirty lodging-houses, where you cannot have the common comforts of light and air.

It should be unnecessary to remind you, that much sickness is occasioned among you, by passing your evenings at alehouses, or in strolling about the streets, or in the fields adjoining to the town. Perhaps those who are most apt to expose themselves in this manner, would pay little attention to dissuasive arguments of any kind. However, those who feel an interest in your welfare, cannot omit making the remark.

There is another subject of great importance to you, on which you seem to want information. A great number of children die of the natural small-pox, almost every year. This mortality must be imputed, in a great degree, to your own negligence; for the faculty at the Infirmary offer to inoculate your children, and give public notice of the proper time for making your application, twice a-year.

year. The next period for inoculation will be in March; the succeeding period in September. The chance of recovery from the small-pox received by inoculation, is so much greater than the chance of recovery from the natural kind, that you ought to consider yourselves as performing a duty to your children, and to the public, in bringing those who have not yet had the small-pox, to be inoculated at the Infirmary.

You ought to be informed, that there is scarcely any thing more injurious to the health of children, than allowing them to work at night in the cotton-mills. It may not always be in your power to prevent their being employed in this manner, but you should be made acquainted with the danger to which you expose them. There is no hazard incurred by their working during the day, in clean, well-managed cotton-mills.

It is also proper to inform you, that you

you may be infected with fevers, by working in the same place with persons who have just recovered from fevers, or by people who come from infected houses, where they are at no pains to keep themselves clean. It is a fact well-known to this Board, that infectious fevers have been conveyed from Manchester to neighbouring towns, and cotton-mills, by persons going from infected houses. You had better collect something among yourselves, to support such persons for a fortnight after their recovery, than expose yourselves to the risk of catching a fever, by their returning too early to work.

People who are discharged from the fever-ward, bring no infection out with them; their clothes being aired and cleaned, during their stay in the House of Recovery.

No. II.

TO DR. FERRIAR.

Dear Sir,

If the following communications, on professional subjects, shall be deemed worthy of your notice, they are entirely at your disposal, and I shall feel gratified, in their being laid before the public, under the sanction of your name. I am, dear Sir,

your sincere and faithful servant,

WM. SIMMONS.

Manchester,
Feb. 10th, 1798.

ON THE USE OF THE KALI PURUM, AS A CAUSTIC IN HYDROPHOBIA.

In the debate on the dog-tax, in the House of Commons, in the year 1796, an honourable member (Mr. Dent) mentioned, that forty cases of hydrophobia had occurred at the Manchester Infirmary,

mary, within a fortnight; and it has been since observed in some of the periodical publications, that such a number of cases must furnish practical inferences decisive of some mode of treatment. Happily, however, for the individuals, not one case of hydrophobia occurred at the time alluded to, but a considerable number, probably upwards of forty, applied at the Infirmary, who had been bitten by mad-dogs—nine of which offered themselves one morning, on my out-patient day. As they all escaped the disease, the means of prevention used may not be uninteresting to medical readers, which consisted simply in the application of the *kali purum* to the wounded parts, and, by way of seeming to do something, the Ormskirk medicine was given, in conformity to custom, to those whose prejudices led them to expect it. For twenty years I have myself had experience of the success attendant on applying this caustic, in wounds inflicted by the bite of mad animals, or of animals supposed to be mad, and

and in no one instance has hydrophobia followed its use. It has, I am informed, been used at our Infirmary ever since its foundation, now near fifty years, with uniform success. Many remedies have been cried up as specific, in preventing and in curing this disease, but their inefficacy is too clearly evinced, in its appearing after they have been attentively administered. Excision, the actual and potential cautery, have been known to fail, and no reliance is now placed on the Tonquin, the Ormskirk, or on any other remedy.

Although the disease would not have appeared, in many of the instances in which the kali purum was employed, it is highly probable that it would have shewn itself in some of them, for it can scarcely be conceived, that the poison should escape being infused in such a multiplicity of instances. Excision is now recommended as the chief means of prevention, and when practicable should be duly enforced; its effect, however,

however, will be secured, by touching the surface of the incised part with the kali purum. In superficial and in deep wounds, I have never known it disappoint the expectation of the practitioner, and it may therefore be applied alone, or jointly with other means, observing only to induce a slough proportioned to the depth and extent of the wound, so as to leave no doubt of having penetrated to the very bottom.

ON THE USE OF NITRIC ACID, IN THE LUES VENEREA.

CASE I.

Mr. —— —— requested me to visit his man-servant, on Friday evening the 4th of November, 1797. I found him complaining of a small chancre, situated on the

the upper part of the prepuce, and in considerable pain, from a bubo in the right groin, in a state of suppuration. I directed him an opening medicine, to be taken in the morning, to apply a common poultice to the bubo, twice a-day, and to keep quiet.

Nov. 26, Suppuration is considerably advanced, and he is freer from pain.

One drachm of the *nitric* acid, diluted in a quart of water, and rendered palatable with sugar, was directed to be taken daily.

Nov. 27, Felt heated last night from the medicine—tongue moist—pulse natural.

Nov. 29, Chancre cleaner—the acid has produced no sensible effect. A caustic was applied to the bubo.

Dec. 1, The chancre looks clean, and

is

is healing—ordered to increase the acid to one drachm and a half, daily.

Dec. 5, Chancre healing—bubo foul—increase the acid to two drachms, daily.

Dec. 7, He took the acid yesterday, as prescribed on the 5th—perspired much last night—chancre nearly healed—the bubo discharges good matter.

Dec. 11, Chancre healed—the bubo looks clean.

Dec. 20, Edges of the bubo indurated and inverted.

Two drachms and a half of acid were directed to be taken daily, and the ulcer was dressed with adhesive plasters.

Dec. 27, Ulcer much diminished in size, and the induration gone. For two days past, he has taken three drachms of the acid in a day, yet his gums are free from

from soreness, and he now goes about his business as usual.

Jan. 10, 1798, He has taken three drachms daily, since the last report—bubo nearly healed. A hoarseness, and slight cough have been troublesome, for the last ten days, and the hoarseness continues increasing—there is a particular circumscribed redness in his cheeks, but no soreness in his throat or gums.

Ordered to discontinue the acid.

During the whole time, he took the diluted acid through a quill, and it was measured out to him daily in a graduated glass measure.

No application whatever was used to the chancre, and only dry lint to the ulcer of the bubo, previous to the adhesive plasters.

CASE II.

Mr. —— ——'s man-servant has been afflicted

afflicted with a venereal complaint for some time. The present symptoms are, nocturnal pains—extensive ulcers in the tonsils—eruptions on the forehead, and hairy scalp, and an abscess on the right side of the scrotum, affecting the testicle on that side.

I directed him to take the muriated mercury, and to suspend the scrotum in a bag-truss. On the disappearance of the symptoms, he left off the medicine; the former consequently returned, after a short interval, and he has now ulcers in his tonsils, and a discharge of matter from the scrotum.

Nov. 29, I directed sixty drops of the *nitric* acid, diluted in a quart of water, with some sugar, to be taken daily.

Dec. 4, Throat better—complains of great tenderness in his teeth and gums, but there is no visible inflammation in the latter. Ordered to take the medicine through a quill.

Dec.

Dec. 7, Throat better—no complaint in the mouth—pains abated.

Dec. 14, Throat the same—two days ago, the eruption re-appeared on his head and forehead. Increase the acid to eighty drops daily.

Dec. 29, Eighty drops made his throat so painful, that he was obliged to lessen the dose to sixty. The tonsils are now healed, but an ulcer has appeared in the angle, at the base of the uvula, on the left side—the eruption on the forehead is very itchy, but less vivid —that on the scalp better. Let sixty drops be taken daily.

Jan. 10, 1798, Tonsils healed, but the new ulcer extends rapidly—eruption less vivid.—Again increase the dose to eighty drops in a day.

Jan. 16, Ulcer increasing—eruptions as vivid as at any former period—complains of pain in his throat, and of the

return of the nocturnal pains, which had ceased—his countenance also looks heavy and oppressed, exhibiting the same appearance as when he first applied to me—scrotum very little troublesome. —He cannot take more than sixty drops in a day.

Discontinue the nitric acid, and again have recourse to mercury.

The first case shews, that the *nitric* acid will cure the primary symptoms of lues venerea, and the second proves, that though it is capable of relieving ulcers of the tonsils, by its direct action, yet it fails in permanently removing secondary symptoms, whatever temporary relief it may afford, in such doses as can be taken, when there are ulcers in the throat. I have given the common nitrous acid of the shops, in this disease, under a variety of circumstances, and in primary and secondary symptoms: the result corresponds with the above recited cases.

It

It requires neither confinement, particular mode of diet, nor hindrance of business. Whether the hoarseness, in the first case, was owing to the acid, I cannot determine; probably a much larger dose was given than is absolutely necessary in primary symptoms, but I was desirous to know to what extent it might be administered, as it was then measured with precision, and taken with the utmost regularity. When not sufficiently diluted, it has excited vomiting, and pain in the stomach. It would appear, that the affection of the gums, and consequent salivation, is owing solely to its direct action on them, and may be avoided by sucking it through a quill, straw, or glass tube.

Although it has failed me in secondary symptoms, when the constitution has been much exhausted by previous disease, and a long course of mercury, it has had a speedy and permanent effect in restoring the health and strength. Under circumstances where a mercurial course

course cannot be entered on, it arrests the progress of the disease. An example of this may be taken from a person labouring under lues venerea, being seized with typhus—the venereal action is suspended during the fever, and is again renewed on its termination; in this case, mercury must be of doubtful propriety: the acid, however, will not only relieve the venereal affection, but restore the patient's strength, and coincides admirably with any tonic plan, that may be adopted.

In ulcers, remaining after a mercurial course, and which, though for a time relieved, are aggravated by the further use of mercury, I have derived much benefit from it.

Such is the result of my present experience of this remedy. I am little solicitous to know how the salutary changes are induced, and cannot at present acquiesce in the doctrine of oxygenation of the fluids, either by means of the nitric

tric acid, or of mercury; and it must be admitted, that opium, laurel-water, and other powerful narcotics, do not act by any known elective attraction.

FINIS.